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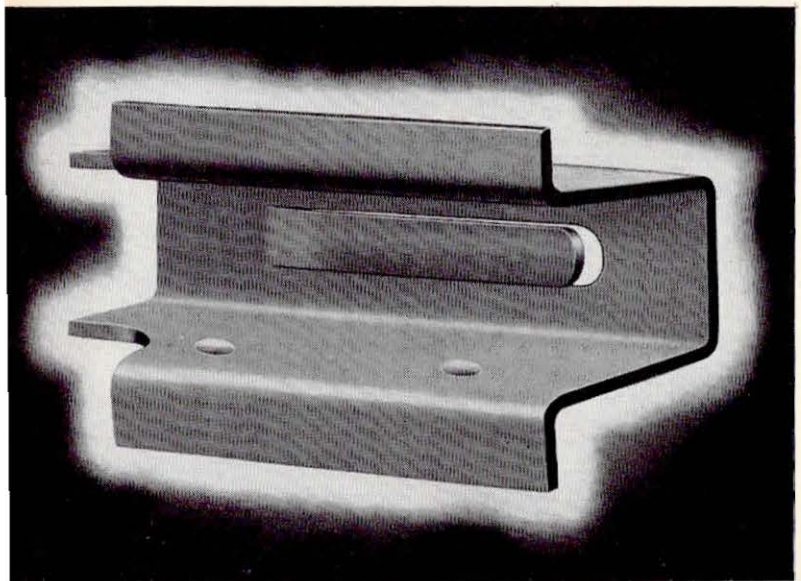

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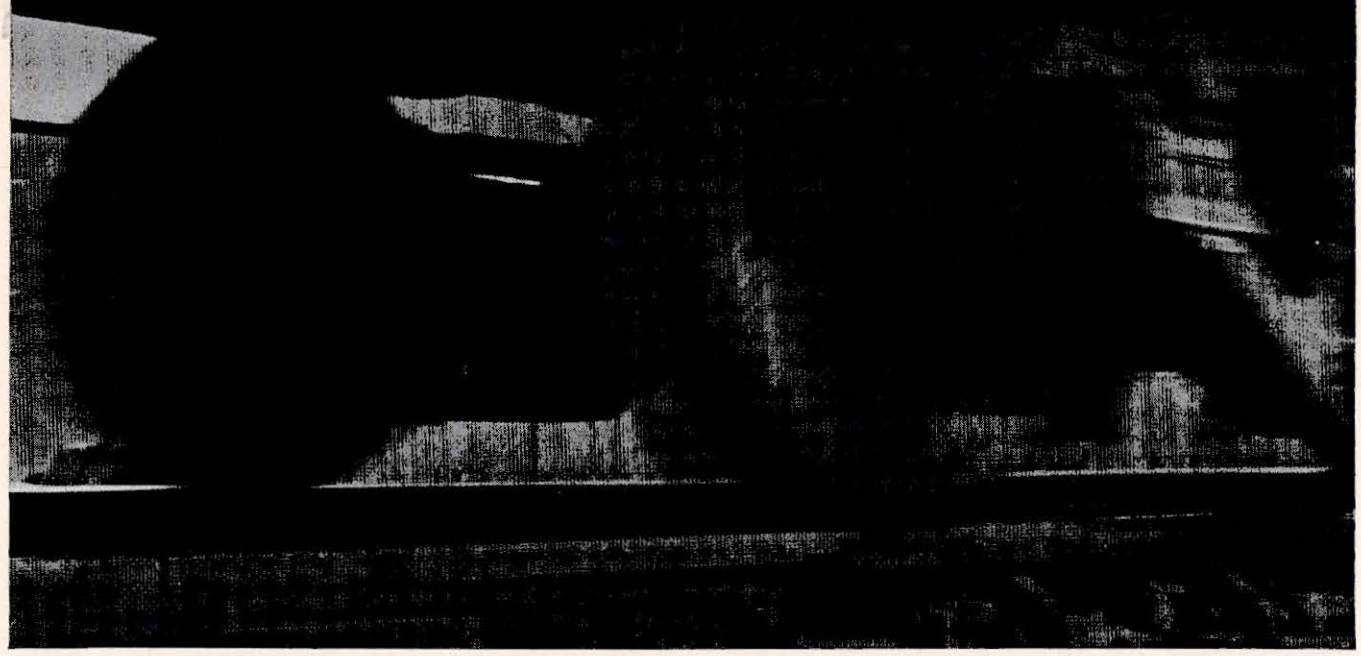

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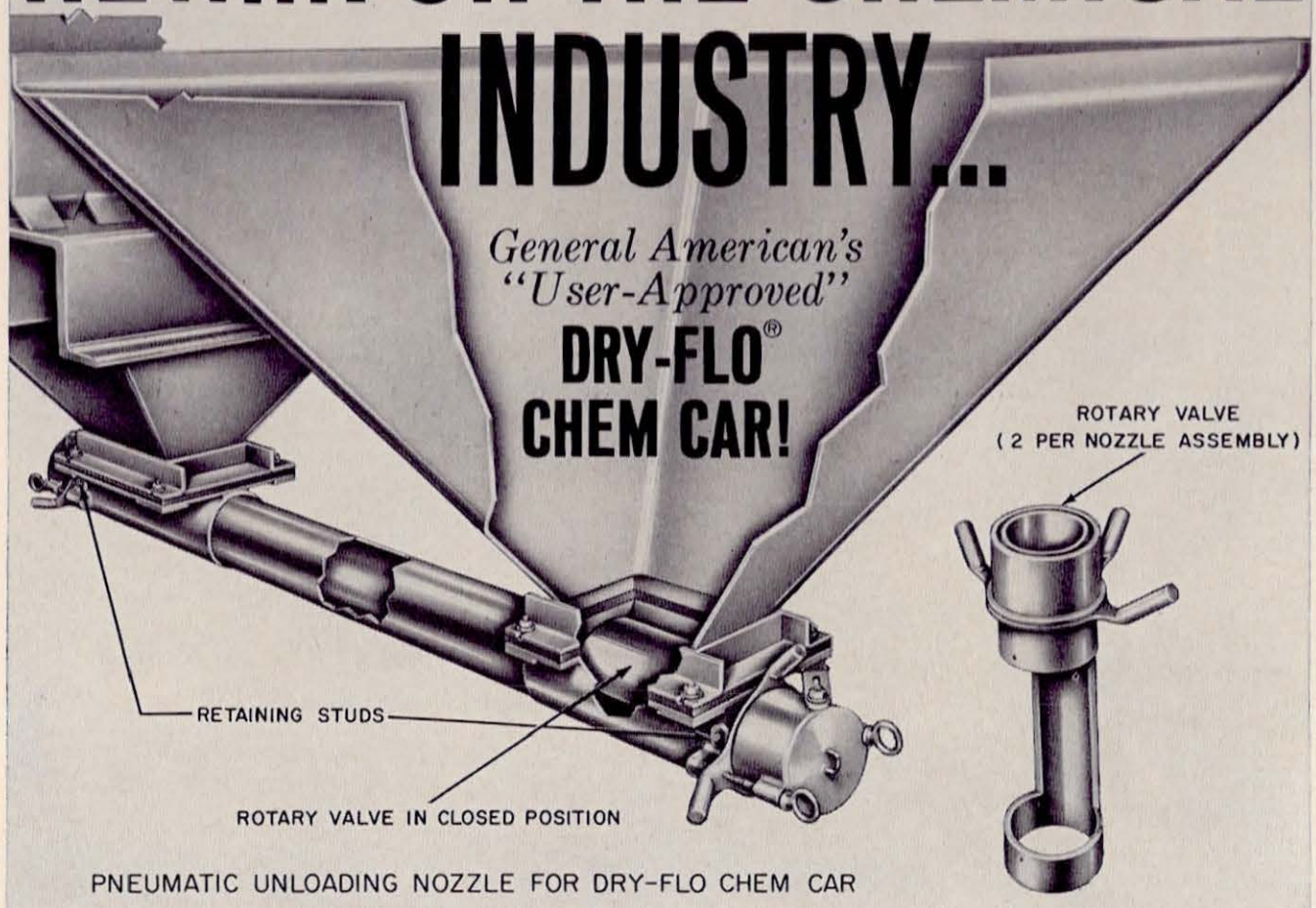

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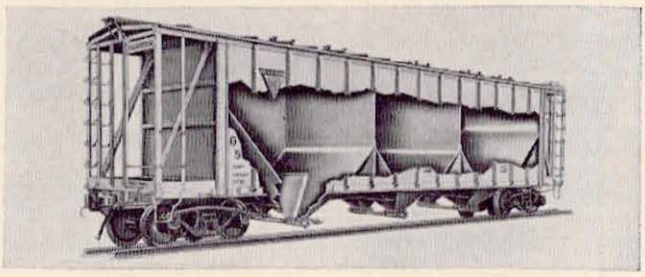

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RAILWAY AGE *weekly* February 6, 1961 • Vol. 150, No. 6

Week at a Glance

Departments

As the Publisher Sees It ... 33
Dividends Declared 16
Freight Carloadings 31
Letters from Readers 16
New Equipment 31
New Products Report 23
People in the News 27
Railroading After Hours ... 22
Railway Market 31
Revenues and Expenses ... 24
Supply Trade 28
The Action Page 38
Watching Washington 10
You Ought to Know 36

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RRs lose round in barge case .....p. 9

Examiner H. J. Blond has recommended that the ICC turn down the IC-SP request for authority to acquire the John I. Hay Co., a water carrier. He thinks railroad control of the barge line could be granted under certain conditions—but concedes that the railroads would find these conditions "burdensome."

Cover Story—Frisco has big microwave plans p.13

The proposed system would extend along the road's major lines from Kansas City, Mo., to Birmingham, Ala., and from St. Louis, Mo., to Tulsa, Okla. Forty microwave stations are contemplated.

Cover Story—Milwaukee speeds car repairs p.14

The road's four-track, all-weather facility at Bensenville, Ill., built at a cost of $1,000,000, is reducing delays to loaded cars shopped for light repairs.

Cover Story—How precast concrete cuts SP expenses p.18

The road recently completed a line change in Texas which substantially reduced operating expenses and train-operating time. Use of precast, prestressed concrete slabs in six bridges is expected to cut maintenance costs, too.

Missile car readied for test p.32

The first Minuteman car is now in Seattle for installation of launch gear. Here's a detailed description of the car that will rove U.S. rails ready to strike back instantaneously at any enemy.

The Action Page—ICC ups the umbrella p.38

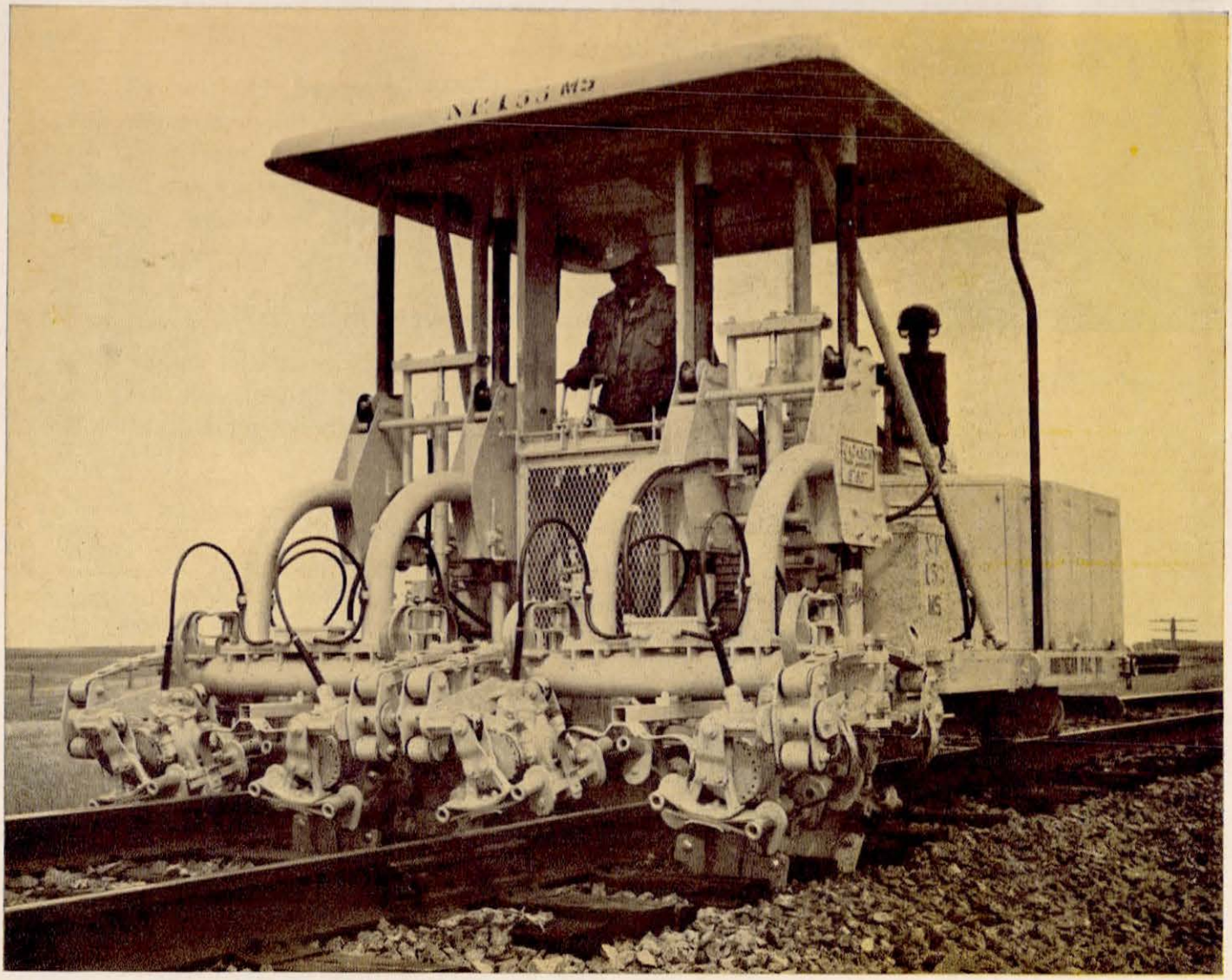
By ordering the establishment of railroad piggyback rates between the East Coast and Texas that are 6% higher than rates for similar service by a "fishyback" water carrier, the Commission has virtually repealed the new rate-making clause of the Transportation Act of 1958. Such manifestly irrational decisions ought to be thoroughly publicized by the railroads.

Short and Significant

Opening statements from both sides. . .

will be received as the Presidential commission studying the management-union controversy over railroad working rules begins work this week. Also due is a decision as to

AT THE A.R.E.A. EXHIBIT



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Week at a Glance CONT.

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11 mos., 1959	8,979,398,045
Operating expenses	
11 mos., 1960	6,951,724,230
11 mos., 1959	7,050,235,908
Taxes	
11 mos., 1960	945,064,644
11 mos., 1959	958,748,814
Net railway operating income	
11 mos., 1960	549,744,777
11 mos., 1959	671,185,991
Net income estimated	
11 mos., 1960	393,000,000
11 mos., 1959	484,000,000
Carloadings revenue freight	
3 wks., 1961	1,445,452
3 wks., 1960	1,783,001
Freight cars on order	
Jan. 1, 1961	21,070
Jan. 1, 1960	43,870
Freight cars delivered	
12 mos., 1960	57,047
12 mos., 1959	37,819

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whether former Labor Secretary Mitchell, now a candidate for the governorship of New Jersey, will continue as chairman of the commission.

Katy will seek ICC approval . . .

of a federal guaranty for a $16 million loan to increase working capital and to help provide for retirement of about $17.4 million in prior lien mortgage bonds due Jan. 1, 1962.

Opposition to BRT-ORC&B merger . . .

is coming into the open in the weeks leading up to a membership vote on an amalgamation proposal already approved by officers and directors of the two unions. Anti-merger feeling comes mostly from ORC&B members, who apparently fear their smaller (but older) organization will be swallowed up and lost in merger with the larger Trainmen's organization.

S&C supply men have formed a new group. . .

known as the Railway Signal and Communications Suppliers Association, headed by W. A. Edwards, Kerite Co. The new organization is a merger of Signal Appliance Association and the Railway Communications Suppliers Association.

Newest Trailer Train member roads. . .

are Central of Georgia, Reading, and Chicago Great Western. Total membership in the piggyback car pool is now 34 railroads and one freight forwarder.

BRT is asking a 15% wage increase . . .

in wage-rules negotiations just getting under way in Canada. Existing contracts expire May 1. Among the preliminaries to be disposed of: BLE efforts to set up bargaining with CN and CP on a system-wide, or perhaps nation-wide, basis.

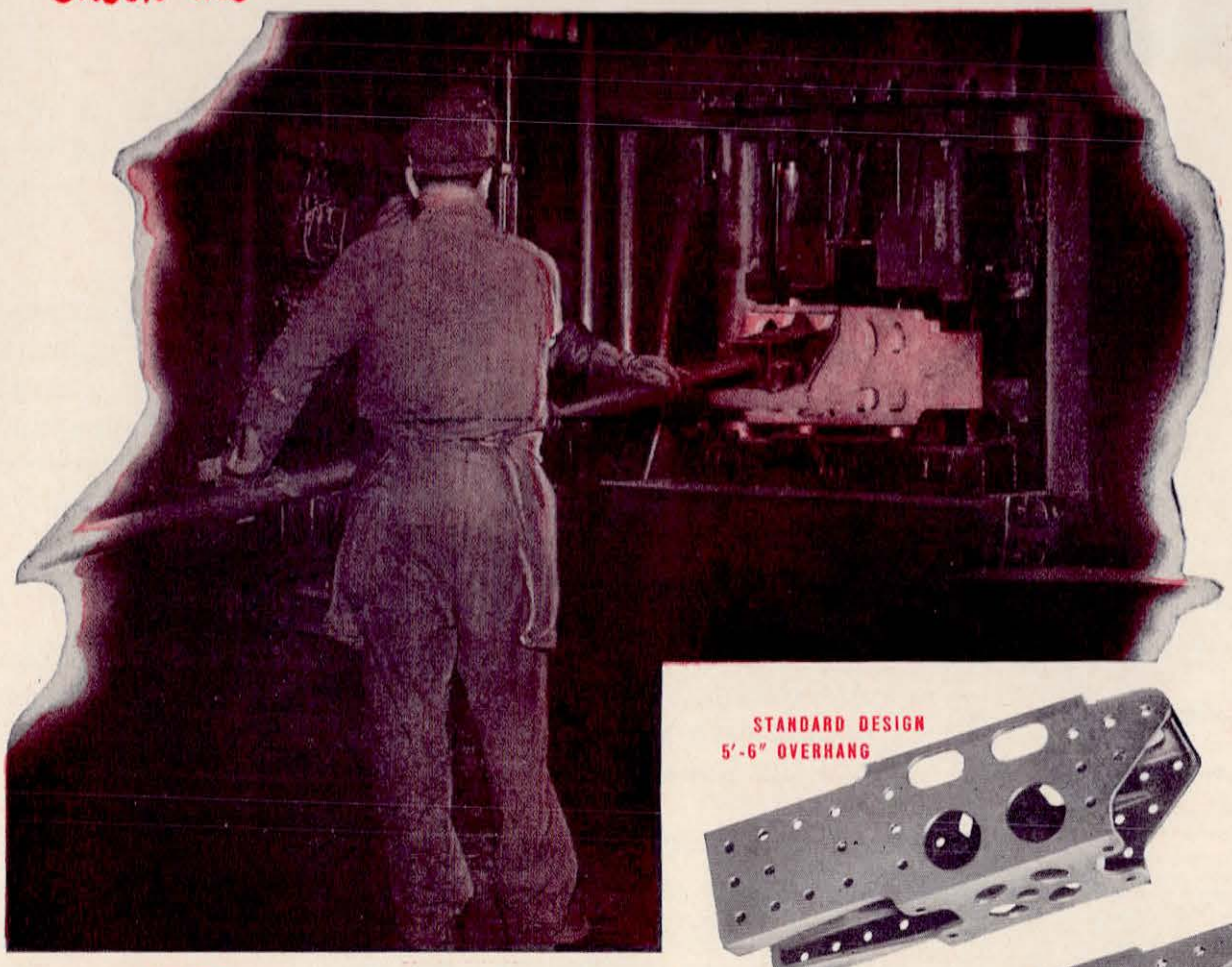
Teamster attacks on piggyback . . .

have brought an answering blast from Roy E. Davidson, BLE grand chief. Rather than appealing for legislation to force the ICC to "discriminate against the railroads again," he charges, the Teamsters "should assist in publicizing the need for a public solution to the problems of automation and technological change."

Discontinuance of Lehigh Valley's. . .

remaining passenger-train service was authorized by the ICC last week. Affected are four interstate trains—two operating between New York City and Buffalo, and two between New York City and Lehighton, Pa. — and two intrastate trains in Pennsylvania.

Check the ECONOMICAL ADVANTAGES!



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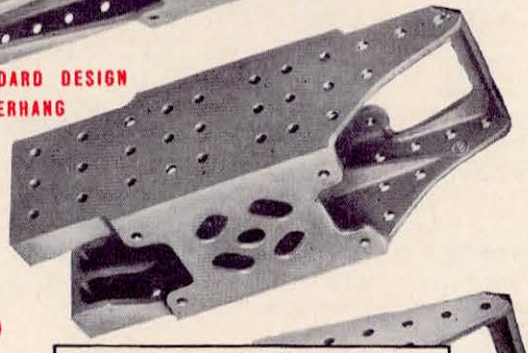

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RRs Lose Round in Barge Case

► The Story at a Glance: The ICC has been advised by Examiner H. J. Blond to find that applicable provisions of the Interstate Commerce Act require denial of the Illinois Central-Southern Pacific application for authority to acquire control of a major barge line—John I. Hay Co. For "discussion purposes only," the proposed report does suggest tie-to-rail conditions which the examiner thinks could be imposed to qualify the proposed acquisition under present law—but he also thinks IC and SP would consider such conditions too "burdensome."

Examiner H. J. Blond's recommendation that the ICC deny the IC-SP application for authority to acquire John I. Hay Co., a water carrier operating on the Mississippi, Illinois and Gulf Intracoastal waterways, was based on his conclusion that the applicant railroads had failed to make showings required by the Interstate Commerce Act.

The required showings must establish that proposed transactions of this type will be consistent with the public interest; will not prevent the water carrier from being operated in the interest of the public and with advantage to the convenience and commerce of the people; will not exclude, prevent, or reduce competition on the water routes involved; and will carry out the precepts of the national transportation policy.

Although IC and SP denied that their proposal made a general case and urged the Commission to deal only with the specific acquisition proposed, the proceeding (No. 20940) has come to be regarded as a potential precedent-setter. The Commission's decision might well indicate what may be done without legislation to implement that phase of the railroad industry's diversification program which calls for freedom to operate water services.

The case marks the first railroad bid for water-carrier rights since the Panama-Canal-Act amendments were added to the IC Act in 1912. Those amendments prohibited railroad control of water carriers operating through the canal—but permitted it elsewhere on the basis of a special showing not required of non-railroad applicants.

The special-showing provisions are in Section 5(16) of the Act. They authorize the ICC to approve a railroad application for authority to acquire a water carrier only if the Commission shall find that the special showings, noted above, have been made.

Most of the opposition to the IC-SP application comes from water carrier and truck interests. Meanwhile, there is much shipper support including that of the National Industrial Traffic League.

In reaching his adverse recommendation on the railroads' proposal, Examiner Blond cited evidence which he interpreted as indicating that protection of their rail operations would be to the fore in IC-SP operation of Hay. The proposed report said:

"Whatever through routes and joint rates affecting combined railroad and water carrier transportation the applicants might institute if the transactions are approved . . . would be limited to those that would not conflict with competitive all-rail rates and routes. Participation, if any, by the railroads would take place only after determining whether reducing the then existing rates and charges or adjusting the service of the railroads would preserve railroad traffic or permit capture or recapture of desirable traffic enjoyed by barge lines.

"In fact, the applicants would invoke the same safeguards to railroad traffic involving routes over rail lines other than their own, before suggesting or agreeing to the publishing of through routes and joint rates reflecting the inherent advantages of low-cost water-carrier service. The applicants define the traffic on which future combined rail and water service might be affected, as that which presently is not moving via an all-rail rate or which moves via other common carriers or private facilities."

The through-route and joint-rate advantages sought by shippers and others supporting the application "do not coincide with the assertions of applicants' witnesses," the proposed report also said. It went on to assert that officers of the applicants "have neither promised nor guaranteed that rate benefits would be available generally if the proposed diversification is sanctioned."

It was evidence of this character which brought Examiner Blond to his conclusion that the applicant railroads had failed to show that their proposal would not prevent Hay from being operated in the interest of the public. As to the law's call for a determination that competition would not be reduced, Mr. Blond referred again to IC-SP operating plans for Hay and noted that Hay routes parallel IC and SP lines—

Restrictions Called 'Ruinous'

Illinois Central and Southern Pacific took a deep breath last week and looked ahead to the next round in their fight for authority to acquire a barge line.

There seemed to be no doubt that exceptions to the ICC examiner's recommendations will be filed.

A spokesman for one of the roads called the report a "typical bureaucratic approach."

He said the restrictions suggested by the examiner (to be applied in the event the roads are permitted to acquire the waterways carrier) would be "ruinous . . . all contrary to the public interest, and the evidence shows that."

Findings such as those in the John I. Hay case, he added, seem to be based not on the evidence but on a "philosophy apparently intended to keep the railroad industry impotent and weak by over-regulation and restriction."

so "the existing competition . . . would be seriously reduced or entirely eliminated." The proposed report then added:

"Other prospective changes in the competitive position of the opposing water carriers and Hay indicates a less direct but equally clear power on the parts of the railroads and Hay substantially to exclude the competition of water carriers operating over the routes in question. As an immediate consequence of being a subsidiary of two strong railroad parent companies, the financial position of Hay, and its economic status amongst competing water carriers, would be greatly improved and enlarged . . .

"Compared to the opportunity of water carriers not associated with railroads, or with major industries engaging in private carriage, the competitive advantage envisioned as accruing to Hay would be overbearing. Under the circumstances, the assertions of most water carriers in opposition herein, that Hay's acquired advantages would force discontinuance of operations of the independently owned water carriers, and that practically all such competitors including the major water carriers would seek to dispose of their lines and operations to other railroads are of substantial merit."

The conditions which he says would permit approval of the acquisition under present law but which he thinks the railroad applicants would find "burdensome" are set out by Examiner Blond in an appendix to his proposed report. There are seven of them, and Mr. Blond says they "are not unduly stringent, and if imposed, would afford substantial benefits to the applicants and to interstate commerce, while protecting the water carrier generally."

First of the suggested conditions would restrict Hay's regulated and exempt water-carrier operations to the transportation of freight having a prior or subsequent haul by rail, or, by highway "as a service auxiliary of or supplemental to railroad service." The second would make Hay's "rates, schedules, and practices governing traffic," subject to all provisions of the Act "in the same manner and to the same extent" as are those of IC and SP. Presumably, this would deprive Hay of the bulk commodity exemption which leaves water transportation of commodities in bulk free of federal regulation.

Other proposed conditions stipulate that Hay be free to enter joint-rate and through route arrangements without approval of its railroad owners; that IC and SP solicitors do nothing to "restrain or curtail" the right of industries to route over all water routes and gateways; that IC or SP advances to Hay for the purpose of acquiring new equipment or constructing rail-water terminal facilities be submitted to the Commission for approval.

"Obviously, compared to the unlimited authorizations sought," the conditions proposed "would be construed as burdensome," Examiner Blond concluded.

Watching Washington *with Walter Taft*

• **GROSS CAPITAL EXPENDITURES** of Class I line-haul railroads for 1960 should total somewhat more than $875 million, up more than 8% from 1959's $818 million. That's the latest indication at the ICC from reports of actual outlays for last year's first three quarters and estimates for the last three months.

EXPENDITURES FOR EQUIPMENT should exceed $595 million, up 6.4% from 1959's $568 million. Road expenditures will be up 16.1%—from 1959's $251 million to more than $280 million. The 1960 figures do not include fourth-quarter estimates from six roads which spent $8.6 million for equipment and $2.6 million for road facilities in the fourth quarter of 1959.

THIS YEAR is getting under way with prospective first-quarter expenditures 10.6% below those of last year's first quarter. Like last year's fourth-quarter estimates, this is based on returns from 104 of the 110 Class I line-haul roads. They say their first-quarter outlays for equipment will be down 13.4% while their expenditures for road facilities will be off 3.4%.

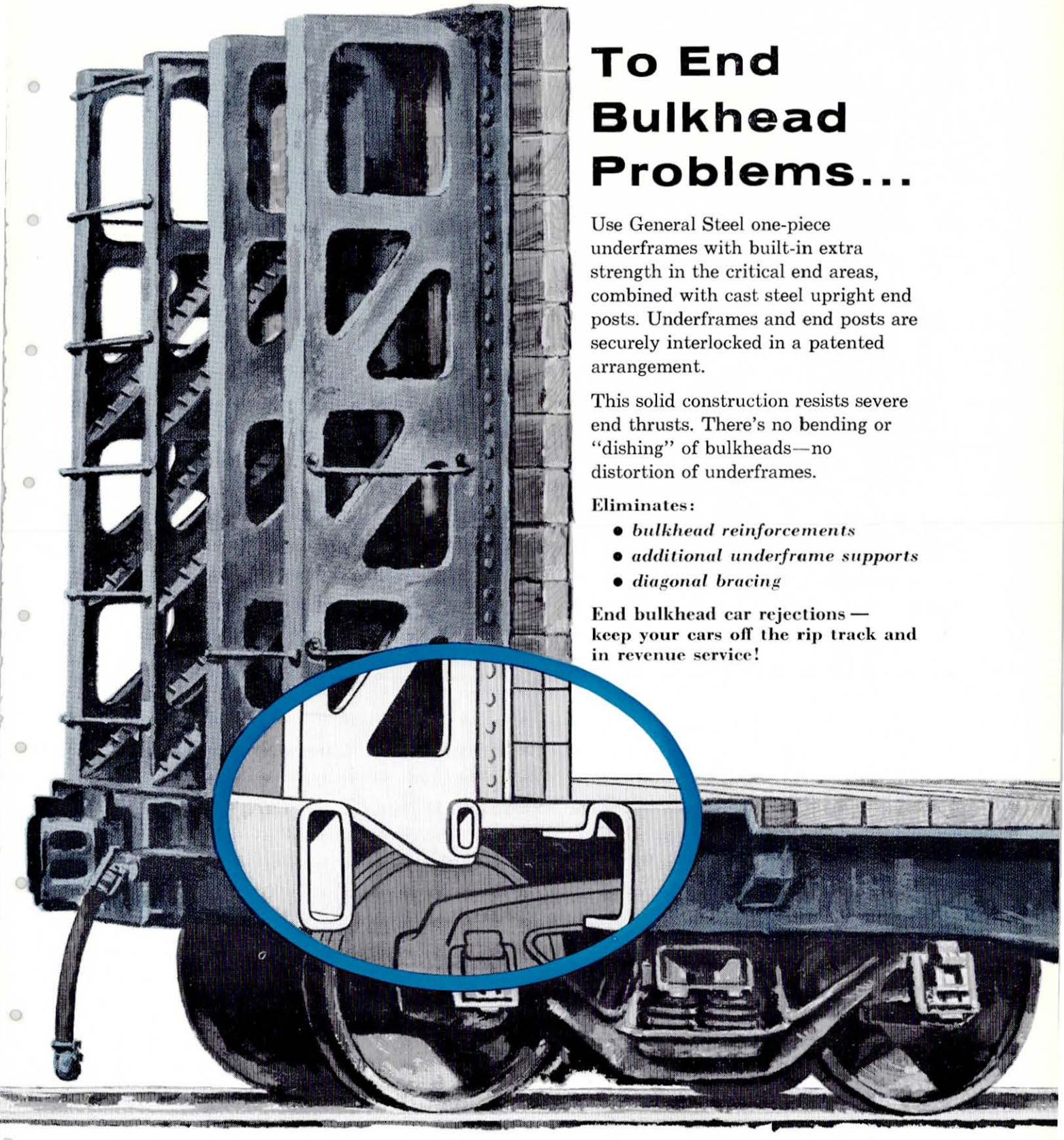
• **NEW MEMBERS OF THE ICC** will be William H. Tucker of Massachusetts and John William Bush of Ohio. They have been chosen by President Kennedy, and are expected to clear the Senate's Interstate Commerce Committee and win Senate confirmation without difficulty. Mr. Tucker, an attorney, is secretary and counsel of Trailways of New England. Mr. Bush is Ohio's director of commerce.

THE APPOINTEES will fill the only two vacancies on the Commission. One vacancy, in a term expiring Dec. 31, 1964, was created last March by the resignation of Anthony F. Arpaia. The other, in a term expiring Dec. 31, 1967, came at the end of last year with the expiration of Commissioner John H. Winchell's term. Mr. Winchell has continued to serve under that provision of the Interstate Commerce Act which permits him to carry on until his successor qualifies.

• **AIR-LINE FARES** continue to hold the price line. The average revenue per passenger-mile of the regularly-scheduled domestic lines in 1959 was but little more than one-half of one per cent above the 1942 average—5.55 cents compared with 5.28 cents. Meanwhile, the railroad average, excluding commutation fares, was up 50%—from 2 cents to 3 cents.

PARLOR AND SLEEPER SERVICES of the railroads yielded an average of 3.84 cents per passenger-mile—up 60% from 1942's 2.4 cents. The Pullman Company's take averaged 1.6 cents. Thus, the 1959 traveler in first-class rail service paid a total of 5.44 cents, about one-tenth of a cent under the composite airline average. But the average yield from 1959's air-coach service was only 4.63 cents, nearly a cent below the first-class rail average.

• **LEVERETT EDWARDS** will continue as a member of the National Mediation Board where he has been since 1950. President Kennedy last week reappointed him for a new three-year term ending Feb. 1, 1964, and prompt Senate confirmation was expected.



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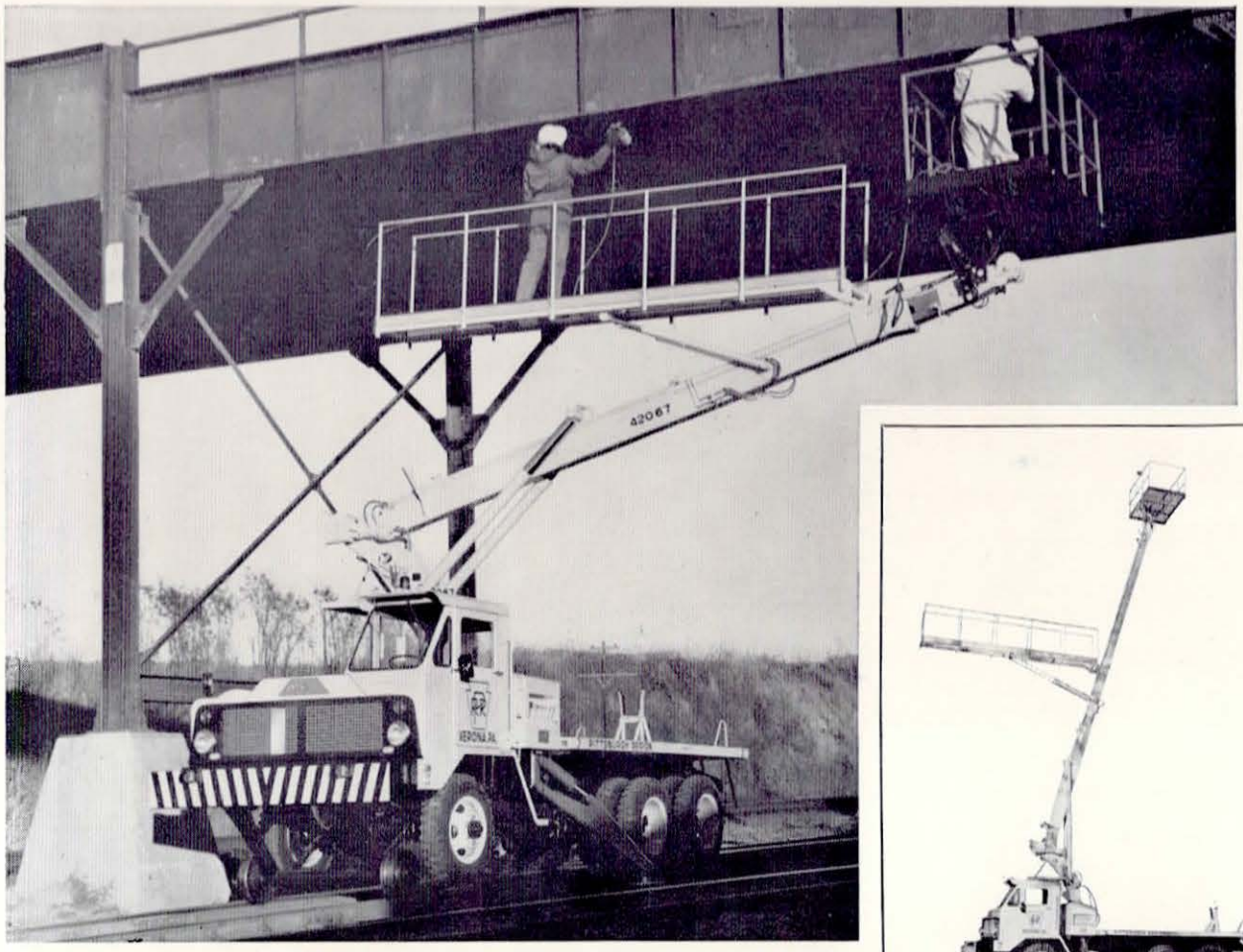

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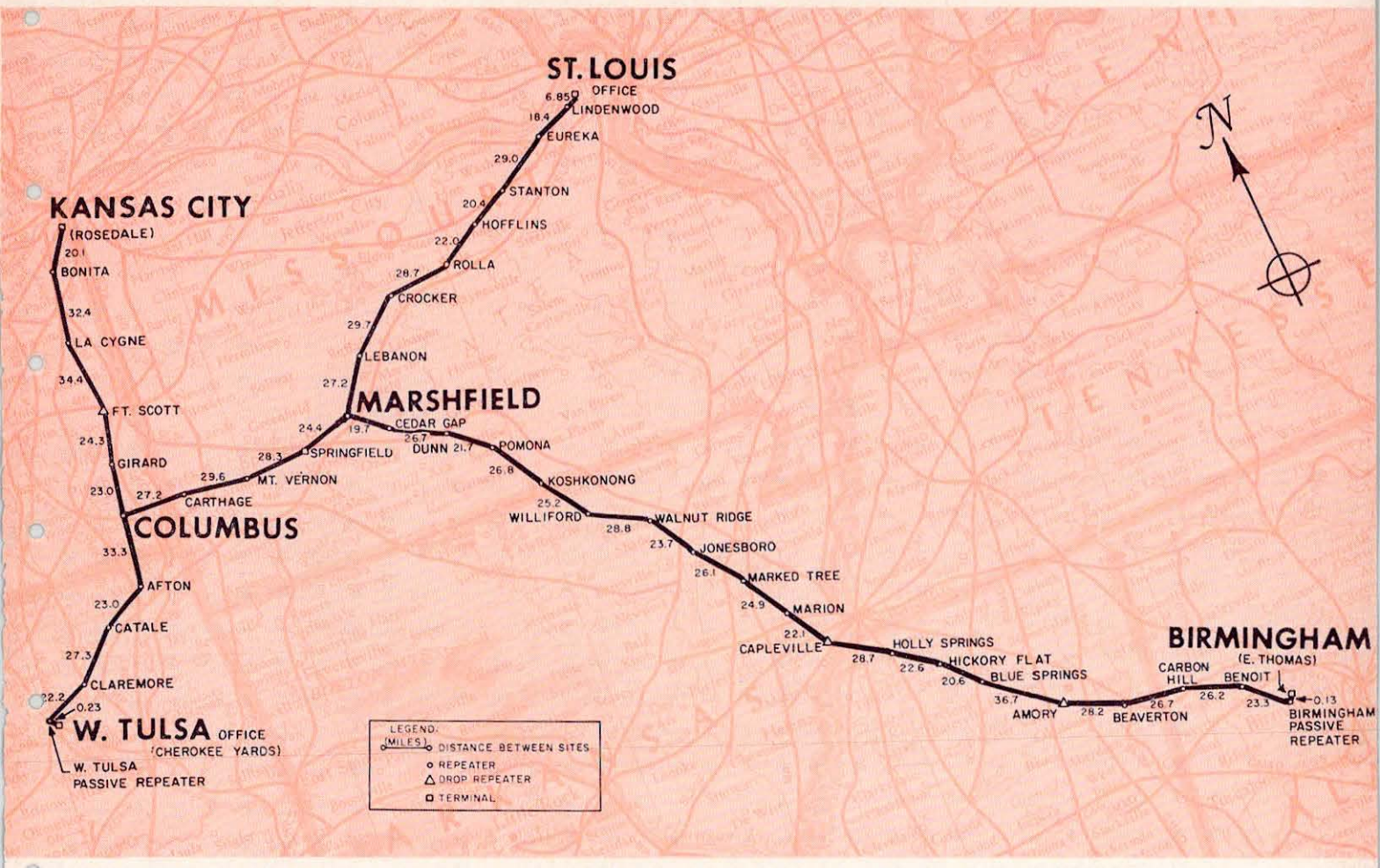


FRISCO'S planned 1,000-mile microwave system would extend along its major lines.

Frisco Has Big Microwave Plans

A 1,000-mile microwave system is under study by the St. Louis-San Francisco. Major reason for microwave is to provide the means for transmission of waybills and other data by facsimile from major yards on the railway to a central data processing office.

The wide-band, high-speed A. B. Dick facsimile system the Frisco is considering, requires a bandwidth equivalent to 60 voice channels for one facsimile channel. To meet StL-SF's data handling requirements, two-way facsimile channels are contemplated.

Microwave is the only practical transmission medium which can provide the required bandwidth.

System to Have 240 Channels

The proposed system would have an ultimate capacity of 240 channels, of which about 160 channel spaces would be part of the initial installation; two facsimile channels (equivalent to 120 voice channels) and 40 voice channels, some with "speech plus" telegraph. The existing pole line would be retained for dispatch and message circuits, though the line would probably be lightened.

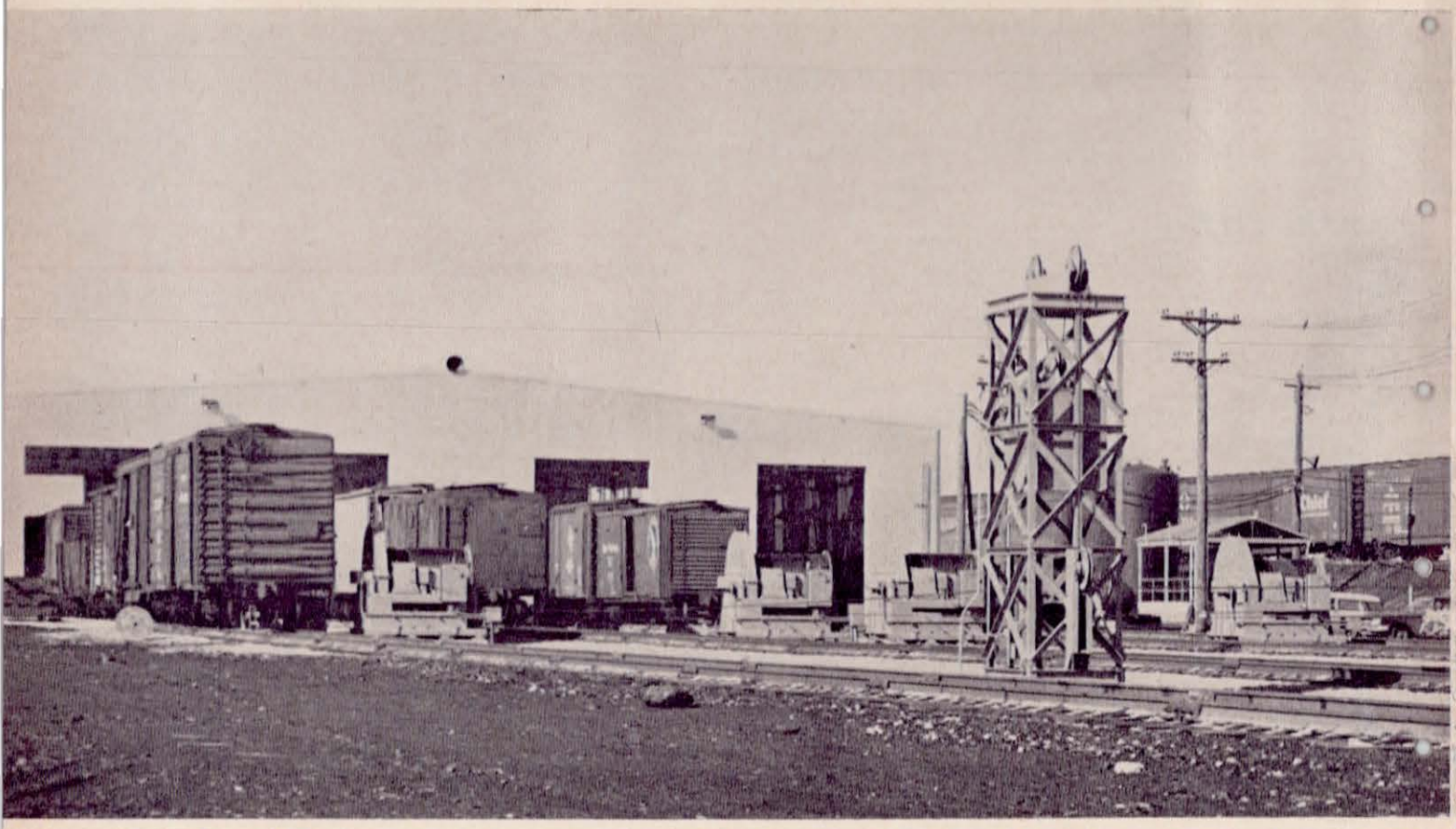
The Frisco's proposed microwave system would extend along the road's major lines in the shape of an "X"—from Kansas City, Mo., to Birmingham, Ala., and from St. Louis, Mo., to Tulsa, Okla. (see map). The road's general office is at Springfield, Mo.

The study was made by the Collins Radio Co. under contract to the railroad. Collins engineers made the complete survey accompanied by railroad personnel. The railroad men provided transportation and pertinent information relating to possible station sites. Survey results filled two volumes, each 1½ in. thick. Included were site plans, photographs of the site, path attenuation data, required antenna size, the formulae and computations. This information is provided for each proposed site and microwave path. A System Data Summary was included. (This is only a first examination and not necessarily the system that may actually be installed. No funds for the system have yet been authorized.)

The average path length planned is about 25½ miles, with the maximum being 36.7 miles between Blue Springs and Amory on the line to Birmingham. The antennas will be mostly 8- or 10-foot dishes, except for the 6-foot dish at the St. Louis office. The latter has to accommodate a hop of only 6.85 miles. Average path loss will be -141.5 db, average receiver input power will be -37.88 dbm, and the average fade margin will be 40 db.

Eleven of the 40 planned microwave stations would be located on the right of way. Most of the other stations would be within one mile of the railroad, with the farthest being five miles from the tracks. A dc microwave system with battery standby is planned in preference to an ac system with engine-generator standby.

The study was under the jurisdiction of R. W. Troth, general superintendent, communications and signals.



INBOUND TRACKS in car repair area are equipped with RMC car pullers. Repair facilities are located adjacent to the

Milwaukee Repairs Cars Fast at

► **The Story at a Glance: "One of the largest spot car repair systems in the country and the first to be installed on a railroad serving the Northwest region," is the way Milwaukee officers describe the $1-million facility at Bensenville, Ill. The four-track, all-weather installation is at the road's major Chicago area yard. Already its round-the-clock operations are producing savings and reducing delays to loaded cars which are shopped for light repairs.**

New car-repair methods are improving the Milwaukee's Bensenville Yard operation. An average of 85 light repair cars are now out-shopped daily in this round-the-clock repair operation. Already it is paying dividends, even though in service only a few weeks. Working conditions are greatly improved, and there has been a substantial saving in per diem costs, because cars are turned out faster. Delays in repairs to bad-order cars have been reduced to a minimum to provide more attractive service to shippers.

The 120- by 120-ft fabricated shop building houses four service tracks and is immediately south of the hump at the west end of the classification yard. Additional facilities include a shop building housing offices, locker room, compressor room, and a stock room. There is a separate building for processing journal lubricators, and a large wheel-storage area.

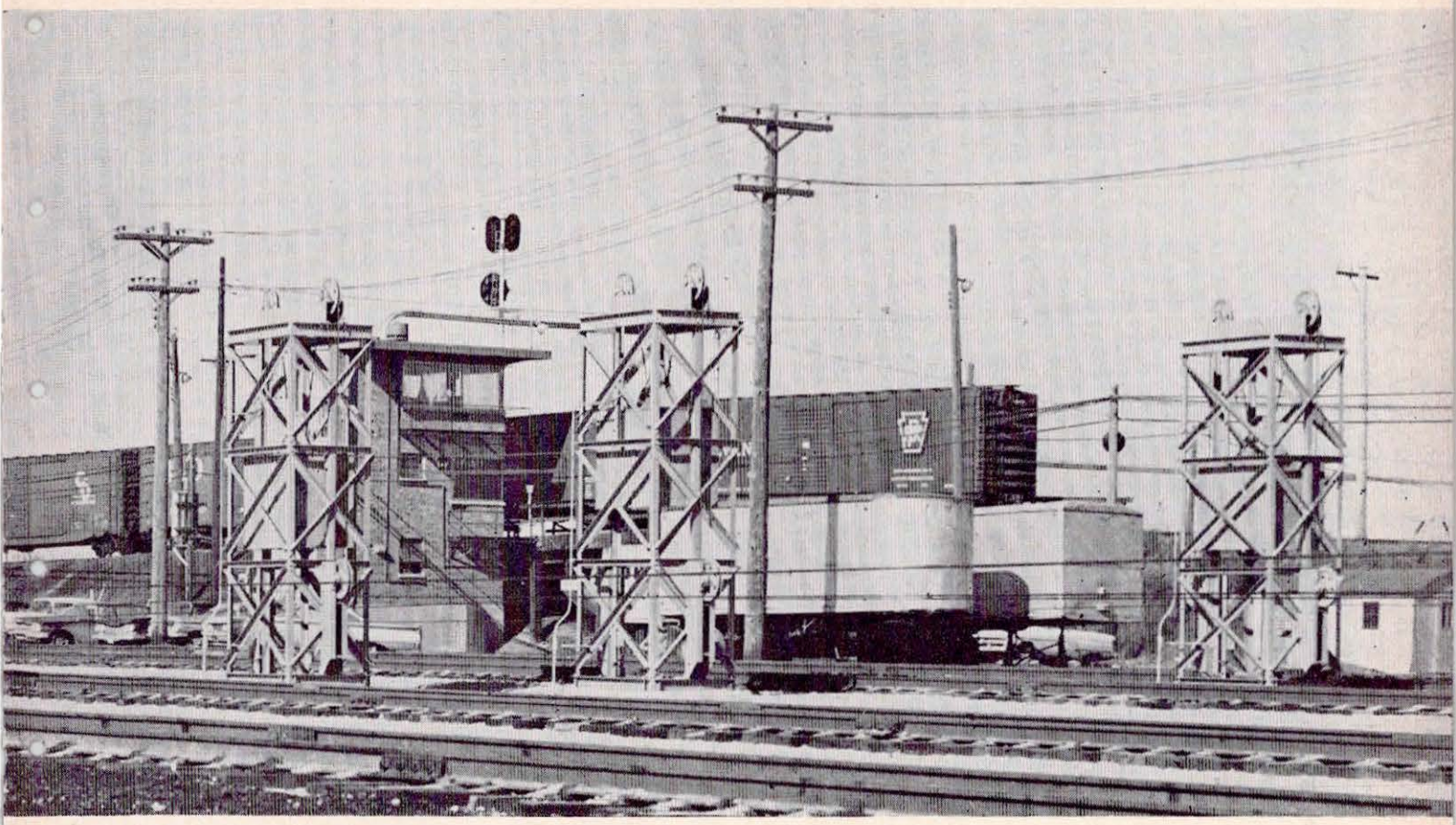
Each of the service tracks is equipped with two recessed, traversing 40-ton Whiting jacks, which raise a car for truck removal within 25 sec; a retarder for spotting cars at this jacking location; two Whiting Trambeam jib crane assemblies equipped with electric hoists for truck repairs. Retractable hose reels mounted on the masts of the jib cranes supply car oil, air, air and solvent, and oxygen and acetylene. Electric welders, mounted overhead at each track, are equipped with retractable cable reels.

Parts required for normal maintenance are stored along each track. "Lazy Susan" bins contain nuts, bolts, rivets, welding wire, and similar materials. Gaskets and hand tools are mounted on peg boards. Larger items, such as side frames, couplers, and bolsters which are stored immediately outside, are handled in and out of shop by fork-lift trucks. Material supply is a responsibility of the Stores Department.

The repair facility operates 24 hr a day, seven days a week. Two carmen are assigned to each track on all three shifts. There are three other carmen assigned on each shift—an air-brake man, a repair billing write-up man, and a fork-lift-truck operator.

Cars are carded for the shop in the receiving yard where both east and westbound trains are inspected on arrival. Shop cars are humped to a track on the south side of the classification yard. From here, light repair cars are moved to the inbound repair tracks, usually in 9-car cuts. Heavy repair cars are generally placed on a stub-end track, although some are repaired on one of the four through tracks. The wrecking crew force is assigned this heavy work, along with cleaning-track duties.

The incoming cars, after being spotted by switchers, are handled by a large between-the-rails "rabbit." All movements, including operation of switches and derails, are controlled from a push-button panel at each track in the building. Lights on the panel show locations



Bensenville hump; cars can be switched readily by the yard locomotives.

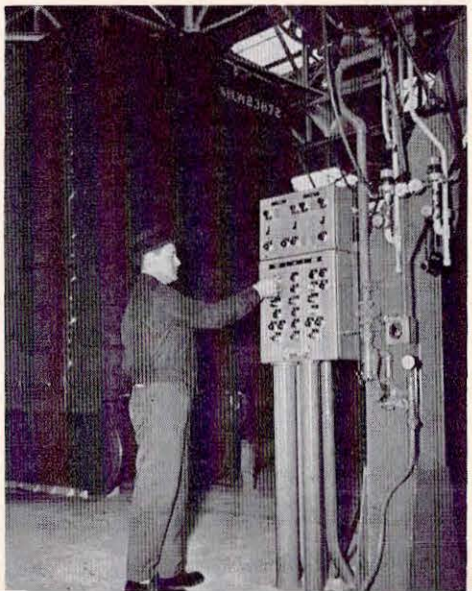
Bensenville

of cars and pullers. The foreman handles locking and unlocking of switches to place cars on lead-in service tracks, also the large rabbit for the initial pull. Further movement of cars is done by carmen assigned to each track.

Cars are generally moved into the shop in pairs. The second car is cut off at the doorway, and the first moved to spot position. Repaired cars are moved outside about three car lengths from the doorway by a small "rabbit" and then roll down the outbound tracks. A spring switch prevents cars from being pushed back into the area when the hump engine pulls the cut for outbound moves.

The building has continuous overhead doors along the north and south walls. Eight natural gas infrared heaters are above each track work area between the jib-crane installations. Clear plastic panels in the roof and side walls give maximum daylight illumination. Mercury vapor high intensity floodlights are outside of the building. A speaker system in the shop connects with the inbound and outbound leads, office, and hump-yard master. Intercom is provided in and out of shop to heavy repair location, office, and wheel track.

PLASTIC PANELS in roof and walls admit maximum of natural illumination. Gas-fired infrared heaters at work locations, started by pushbutton, are timed for 15-min. operation. Facility makes repairs on round-the-clock basis.



CONTROL BOARD is mounted on mast of jib crane which carries hoists used in truck disassembly. With panel it is possible to operate car movers which bring cars to the repair "spot" and move them out after work is completed.

Letters from Readers

'Grab Bag'

Cleveland, Ohio

To the Editor:

We have read with interest the excellent article, "RR Unemployment Insurance: A 'Grab Bag' for the Idle," in the January 23 issue of Railway Age and congratulate you on the excellent treatment in this troublesome matter.

We also particularly liked the article entitled "Unions and 'Security'" on the Action Page of the same issue. . .

C. B. Bennett
Assistant to President—Public Relations
Nickel Plate

Reading Has TV, Too

Philadelphia, Pa.

To the Editor:

An article, "What's Wrong With Railroad TV?," in your Jan. 9 issue refers to "fewer than 12 railroads" with such installations, then lists 11 roads. . .

For some reason, two television installations of the Reading were not included in this listing, although our road was a pioneer in the use of TV in coal dumping.

Our first installation was made in November 1958, at the Reading's coal dumper in Port Richmond, Philadelphia. The second was made in March 1959, at the railroad's Port Reading, N.J., coal dumper.

Both closed circuit sets have been in intensive operation since their installation, and while there were a few "bugs" to work out, they have been most satisfactory.

Harry E. Hammer
Director Public Relations
Reading Company

Beschev in Perspective

Washington, D.C.

To the Editor:

That was truly a wonderful article which Railway Age ran in the January 2 issue concerning the interview with Soviet Minister [of Railways] Beschev and other aspects of the Russians' impressions of railroading in America. Mr. [Curtis] Buford [AAR vice president—operations] was delighted as much as the rest of us with the efforts you made to put the Soviet comments into perspective. Obviously, this was not an easy job to do without recriminations and finger pointing, but the tone of your whole presentation avoided this completely. . . . A beautiful job!

James N. Sites
Manager, News Service
Association of American Railroads

Aerial Mapping

Ottawa, Ont.

To the Editor:

We were especially interested in your excellent report "Proposed PNR Route Was Mapped by Air" (RA, Dec. 12, 1960, p. 44), since Canadian Aero Service performed some 70% of this aerial survey.

Your readers concerned with time schedules may be interested to know that 490 mi were mapped within just 70 days. The area we covered was 334,250 acres, and the map scale 1 in. = 400 ft with 10-ft contour interval.

The tight deadline and very rugged terrain permitted us to establish only a minimum number of control points on the ground. Our engineers employed "bridging" techniques to establish photogrammetically the positions and elevations of needed points between the ground control points. The maps' accuracy did not suffer.

J. W. Strath
Vice President
Canadian Aero Service, Ltd.

Timely Editorial

Denver, Colo.

To the Editor:

Your Action Page editorial "TOFC —Too Much Guesswork" (Nov. 28) is timely. I hope considerable attention is given to it.

R. Knox Bradford
Vice President
Denver & Rio Grande Western

Stop Signs Save Lives in Michigan

A 75% reduction has been made in the annual number of accidents at 313 railroad crossings of secondary highways in the State of Michigan. The red and white octagonal signs are installed at crossings protected only with the conventional crossbuck signs. The safety record resulting from the installation is as follows: since Stop signs were installed 3 years ago, only 10 accidents occurred at the 313 crossings. In the 5-year period before the sign installations, 57 serious accidents had occurred at the crossings. Reason for the improved safety record is two-fold: First—the octagonal red and white Stop sign, familiar to motorists, is new at rail-highway crossings. It attracts the motorists' attention. Second—Michigan law requires that motorists encountering such signs come to a complete stop before proceeding. New York Central's general attorney George Wyatt led a successful fight in the state legislature for the passage of a bill permitting installation of these Stop signs at all county secondary road crossings with railroads, provided county authorities agreed.

Dividends Declared

NORFOLK & WESTERN.—4% adjustment preferred, 25¢, quarterly, payable Feb. 10 to holders of record Jan. 19; 6% preferred, 15¢, quarterly, payable Feb. 1, May 1, Aug. 1 and Nov. 1, to holders of record Jan. 12, Apr. 13, July 13 and Oct. 13, respectively.

NORTHERN OF NEW HAMPSHIRE.—$1.50, quarterly, paid Jan. 31 to holders of record Jan. 18.

PROVIDENCE & WORCESTER.—$2.50, quarterly, paid Dec. 31 to holders of record Dec. 19.

SARATOGA & SCHENECTADY.—$1.50, paid Jan. 16 to holders of record Jan. 3.

SEABOARD AIR LINE.—50¢, quarterly, paid Dec. 28 to holders of record Dec. 16.

WABASH.—$1.50 paid Dec. 22; $6, special, paid Jan. 5.

WEST JERSEY & SEASHORE.—$1.50, semiannual, paid Jan. 3, to holders of record Dec. 15.

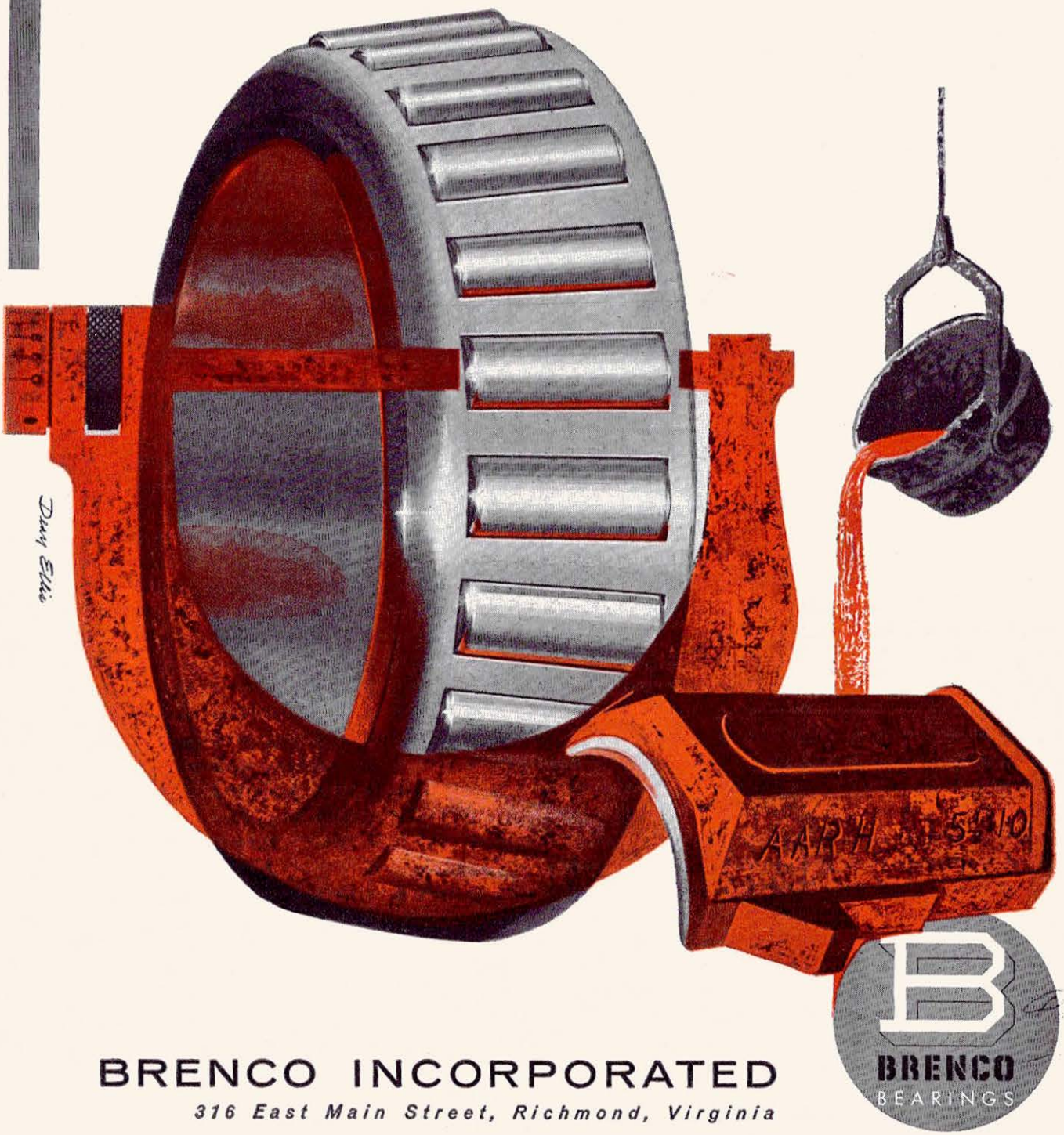
Why Brenco makes both roller and solid bearings

We enjoy our unique position of being the only manufacturer to make both roller and solid bearings. It gives us an unbiased, unfettered concentration on a big challenge: better bearings for the railroad industry.

We believe that both types are needed today. Roller bearings for new, fast-freight, high-mileage cars. Solid bearings for older equipment, where they will continue to perform rugged duty.

We have acted according to our belief. Brenco solid bearings have seen years of reliable service. And now the Brenco *crown-taper* Roller Bearing is showing excellent results.

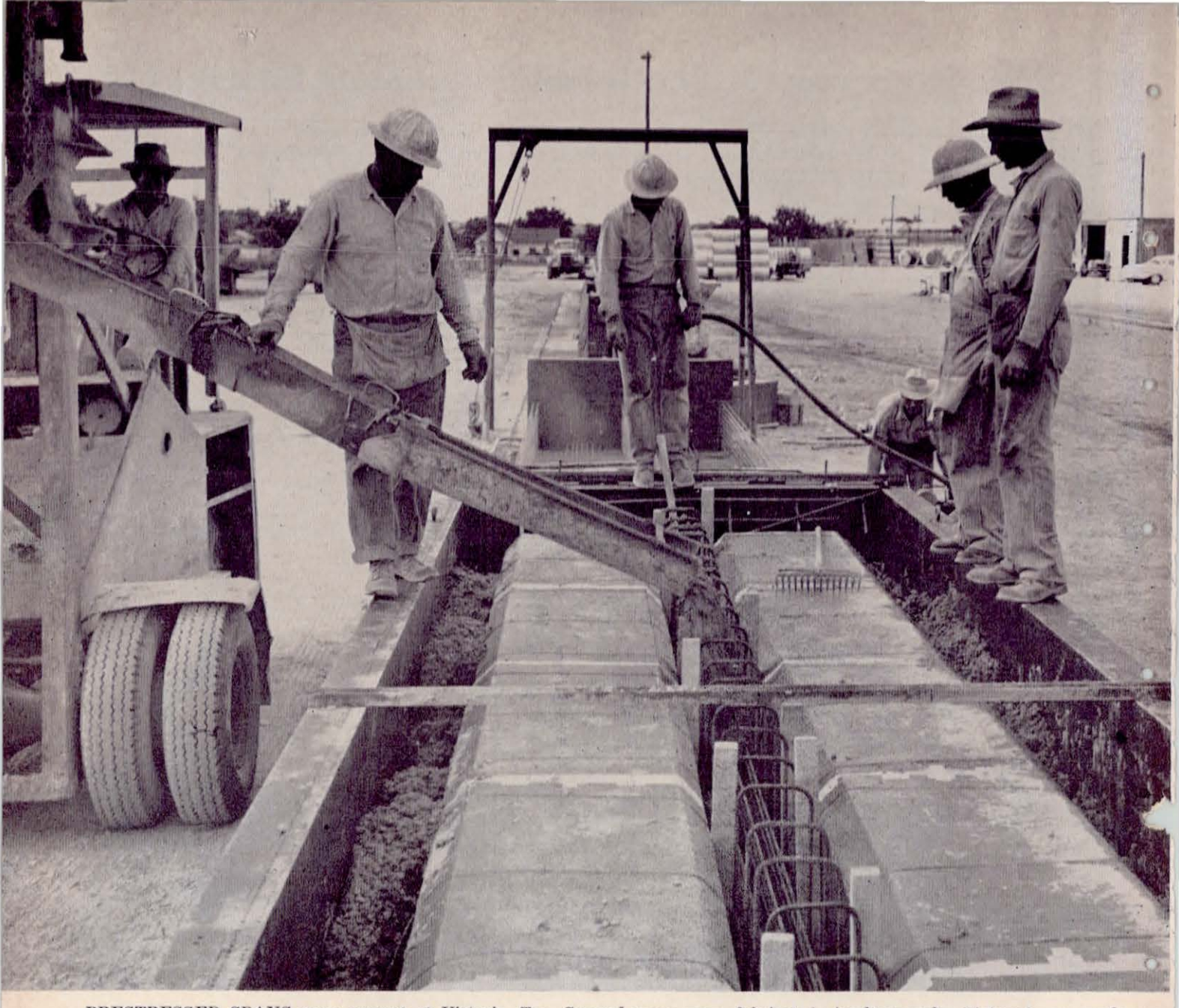
Brenco bearings... more than a million in service!



BRENCO INCORPORATED

316 East Main Street, Richmond, Virginia

BRENCO BEARINGS



PRESTRESSED SPANS were precast at Victoria, Tex. Several spans were fabricated simultaneously. Pictured are employees

Precast Concrete Bridge Slabs

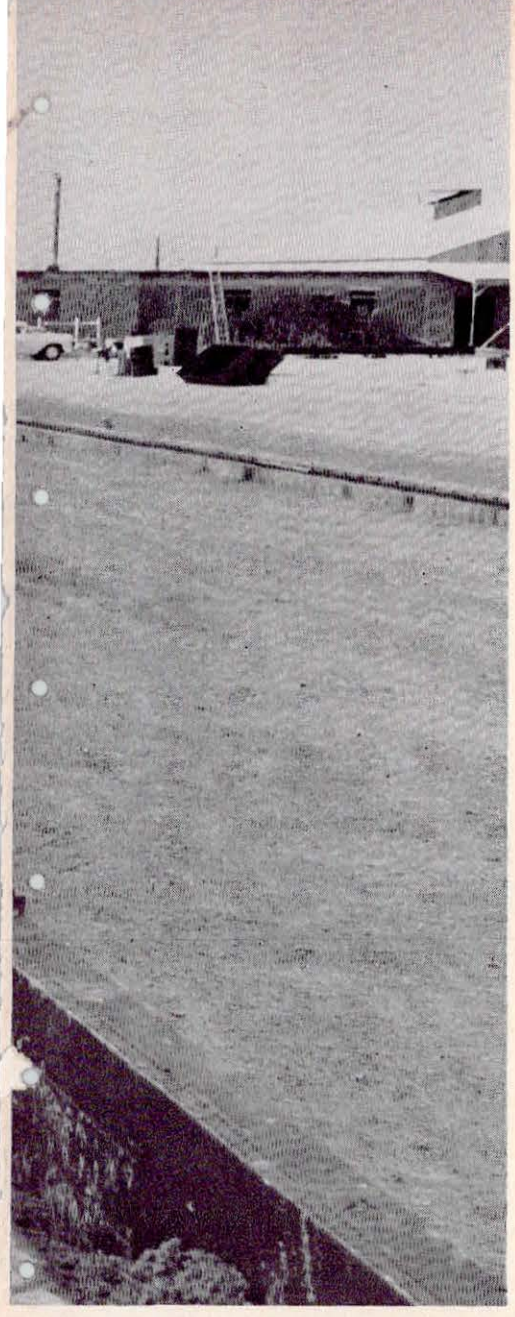
► **The Story at a Glance: Minimum maintenance expenditures were one of the main objectives when the Southern Pacific was designing the bridges for a line change recently completed in Texas. This consideration led to a decision to make extensive use of precast, prestressed concrete for the deck slabs and pile caps. Piles are spirally welded steel pipes.**

Precast, prestressed concrete was used by the Southern Pacific in the construction of six bridges required by a nine-mile line change completed in Texas last year between Etholen and Small. A feature of these bridges is that the steel foundation piling forming the bents is welded to plates embedded in the undersides of the precast, prestressed concrete caps. A brief description of the line change accompanies this article.

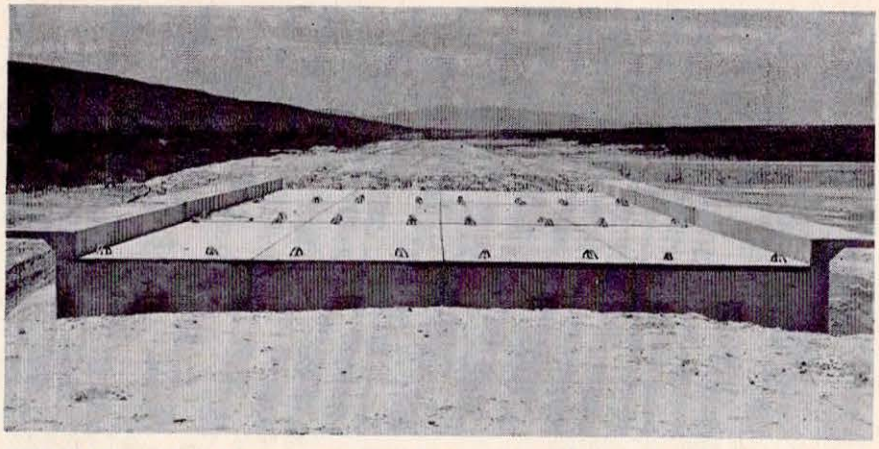
Principal characteristics of the six bridges are listed in the table on page 22. In addition to these structures the new line required the installation of 36 corrugated metal culverts. All the waterway openings were built or installed in advance of the grading work. The culverts were installed by railroad forces but the bridges were constructed under contract, with railroad forces doing the welding work required.

Five of the six bridges are supported on bents consisting of Armco spirally welded pipe foundation piles. There are three piles to an end bent and four to each intermediate bent. The sixth bridge, No. 744.09, with a 65-ft deck-girder span, is supported by reinforced-concrete abutments and a center pier. The presence of rock at the earth's surface at this location prevented the driving of piles.

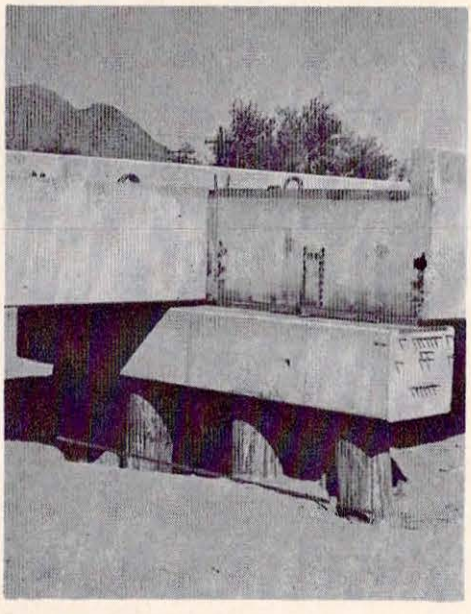
The pipe piles used are 16 in. outside diameter. They were given a shop coat of paint on the outside before driving and coats of red lead and aluminum on the exposed surfaces after driving. Piles were driven by a crawler crane equipped with suspended leads, and a steam hammer which was driven by air supplied by a 600-cfm compres-

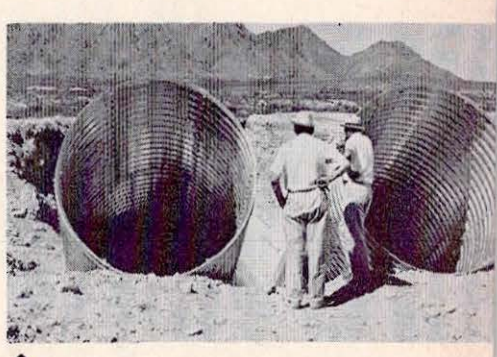


of contractor.



DOUBLE-TRACK, 3-span prestressed-concrete bridge at Small, Tex., is typical of others, except it will support a siding as well as a main track. Combination footwalks and curbs are necessary where siding is involved.





UNUSUAL INSTALLATION of a culvert was made to intercept drainage above the railroad and carry it beneath the tracks.

PILING consisted of spirally welded pipes. These were welded to plates embedded and anchored to the undersides of the caps.

to Cut SP Maintenance Costs

sor to produce a bearing capacity of 75 tons each.

The railroad reports that it obtained an average of 10 ft more penetration than had first been anticipated through the use of these piles. Average total penetration was about 35 ft. Sections were added by welding as necessary to obtain the desired lengths. A back-up ring was used on the inside of the piles at the splices to insure a proper weld in case there were any gaps left after measuring and cutting. As each pile was driven, the earth core compacted until its surface was about 2 ft below normal ground level. These voids were later filled with concrete.

(*Continued on page 22*)

Line change cuts train time, maintenance costs

Substantial reductions in operating expenses and train-operating time were effected by the line change on the Southern Pacific between Etholen and Small. The project was completed at a cost of more than $2 million.

It is anticipated that the new line will also effect savings in maintenance. For one thing, there will be fewer miles of track to maintain. The old line, now retired, consisted of 11.53 miles of single track and four sidings totaling 3.24 miles. The new line, also single track, is 9.29 miles long and has two 9,000-ft sidings and two 325-ft set-out spurs. There will be less wear on the new track through the elimination of many sharp curves, including six of 10 deg. The new line has only eight curves, all of 2 deg.

IN 1960 A GREATER SHARE
OF NEW FREIGHT CARS
THAN EVER BEFORE WENT ON
ROLLER BEARINGS
TIMKEN ROLLER BEARINGS
PULL HERE

More roller bearing cars were put on TIMKEN® tapered roller bearings than on any other make

The big switch to "Roller Freight" really rolled in 1960 with America's railroads putting a greater share of new cars than ever before on roller bearings, and more of them on Timken® tapered roller bearings than any other make.

Railroads are buying more and more roller bearings to solve the hot box problem and cut maintenance and operating costs to a minimum. And the performance records of Timken tapered roller bearings prove that they're the best investment.

1. Timken bearings average more than a hundred million car miles between car setouts caused by overheated bearings.
2. Timken bearings will roll four years without additional lubrication.
3. In high-speed piggy-back service, Timken bearing-equipped cars have already rolled over 400,000 miles on their original bearings. Timken bearings roll the load, eliminate metal-to-metal sliding friction—keep freight cars rolling for a better return on investment.

Now's the time to switch to "Roller Freight" for more profit. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

SP BRIDGES HAVE PRECAST CONCRETE (*Continued from page 19*)

The caps and slabs are of precast, prestressed concrete. The size of the anchor plates and the amount of stress in the prestressing steel were determined in accordance with "Criteria for Prestressed-Concrete Bridges; U. S. Bureau of Public Roads, Washington, D. C., 1954." Specifications for the concrete called for a minimum strength of 5,000 psi at 28 days.

Steel plates with anchor lugs were cast in both the upper and lower faces of the caps to provide metal underneath for welding to the piles and on top to serve as masonry plates for the slab-bearing plates. Also, short lengths of 1-in. pipe, projecting beyond one side of the cap and penetrating the lower pile-connection plates, were cast in the caps over each pile location. These were used for filling any voids at the tops of piles with cement grout after the welding had been completed.

Two deck slabs were used for each span of the single-track structures and four for each of the double-track spans. The slabs were all of the same cross section, being 7 ft wide and 3 ft deep. Two hollow cores were cast lengthwise in each slab for reducing the dead load. Ballast-retainer curbs were used on the field sides of all slab decks, except that combination curbs and walks were included on one side of the double-track structures.

Steel lifting eyes were cast near the ends of the slabs to facilitate handling, and two lifting holes were provided in each cap. Since the slabs of all bridges were laid on a grade of more than 1% it was not necessary to provide weep holes for deck drainage.

The decks over the two steel-girder spans (Bridges 744.08 and 749.35) were formed of treated timbers and ballast guards. A waterproofing protective coating, using asphalt plank, felt and bitumen, was applied over the timbers. Because of the dry climate the deck timbers are expected to last indefinitely.

Except for Bridge No. 744.09, which has concrete abutments, the bulkheads of all bridges were made by driving sheet piling. These piles are of the interlocking type, using 7-gage galvanized metal. Two to four steel channel sections were welded horizontally to the exposed face of each bulkhead to serve as walers for extra rigidity. Embankment slopes at bridge ends were faced with riprap and grouted.

Bridge Structures on the New Line

BRIDGE NUMBER	CURVE OR TAN.	SPANS		SINGLE OR DOUBLE TRACK
743.50	T	2—22′ 6″	Prestressed-concrete slabs	Sgl
744.09	T	(1—32′ 10″ (1—65′	Prestressed-concrete slabs Steel deck-plate girders	Sgl
749.35	2° C.	(5—32′ 10″ (1—81′	Prestressed-concrete slabs Steel deck-plate girders	Sgl
750.37	T	3—22′ 6″	Prestressed-concrete slabs	Sgl
751.02	T	3—22′ 6″	Prestressed-concrete slabs	Dbl
751.04	T	1—32′ 10″	Prestressed-concrete slabs	Dbl

Railroading After Hours with Jim Lyne

SIMPLE PRESCRIPTION—I was reading a report the other day of a speech by Illinois Central's Wayne Johnston which seemed to me to provide a prescription for the cure of the railroads' present unsatisfactory situation—in a few eloquent words. His statement went something like this: "Take your foot off of the railroads' neck." The industry isn't seeking any more than that, and it certainly can't possibly ask for anything less.

SNOWBIRDS' FARES—Railroads ought to increase passenger fares in snowy weather, to get some contribution from the "snowbirds," who put railroads to the expense of providing this standby service throughout the year. So Economics Professor William Vickrey of Columbia University concedes. But he would go farther and give the "regulars" an inducement to stay home during blizzards, providing some kind of rebate on multiple-ride tickets not used on stormy days.

It isn't merely a question of whether to charge the snowbirds a premium—the ethics and economics of that are clear. The really tough question is how to collect the premium, when trains are so crowded that trainmen cannot make their way through them.

Professor Vickrey notes that the British railways operate 8-car multiple-unit trains with 2-man crews; and asks "where is the vaunted efficiency of American labor?"

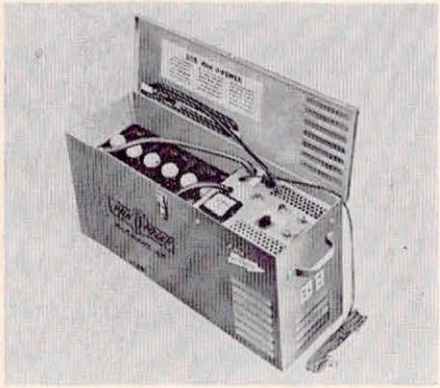
LETTER FROM THE BOSS—D&H's President William White, every now and then, passes along a report to employees, which he labels "A Letter from the 'Old Man'." He's sent me a copy of his most recent one, which goes into the background of New York's "full" crew laws, repeal of which is recommended by the state's public service commission.

"Repeal of the 'full' crew laws alone wouldn't make the railroads healthy," the letter says, "but it is one of the things that needs correction. Railroads can't afford to employ men in unproductive jobs while necessary work, such as repairing locomotives, is deferred because funds are not available.

"Railroads of New York are willing to enter into an agreement with the labor organizations to minimize the effect of repeal on present employees."

I like to see such frank reports to employees. It's better to have this discussion out in the open than relegated entirely to the grapevine. Wouldn't it be a good thing, too, if either railroads or unions would see that all employees get a complete report on Jimmy Hoffa's political campaign against piggybacking?

New Products Report

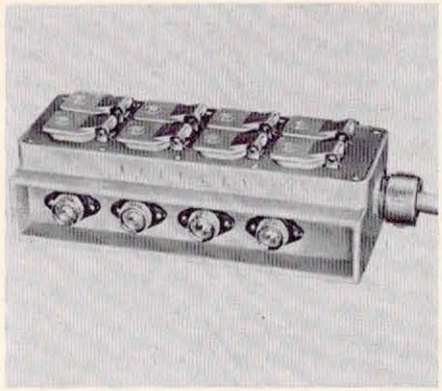


Inverters

The Activerter provides 110-volt AC power from a 12-volt battery. It can be used to operate electric power tools, lights and other devices. It is available in four models from 150 to 500 watts output. By the operation of a switch the Activerter becomes a fast or slow charger for 6 and 12-volt batteries. The units are available completely self-contained, including battery. *Electric Storage Battery Co., Dept. G-RA, P.O. Box 6266, Cleveland 1, Ohio.*

Pocket Transmitter

A fully transistorized FM radio transmitter is now available for operation on the 25-54 mc and 132-174 mc bands. It provides 500 milliwatts RF power output. The unit (shown in hand) is completely self-contained, including microphone, antenna and batteries, and serves as a mate to the receiver (at right). It uses either rechargeable nickel-cadmium (9 hours), or replaceable mercury (80 hours), cells. *Motorola Inc., Dept. RA, 4501 W. Augusta Blvd., Chicago 51, Ill.*



Multi-Tap Outlet Box

The new Multi-Tap outlet box molded of "Safety Yellow" Neotex permits the user to install his own receptacles. Unbreakable plastic covers are available for either four duplex or four single receptacles and may be ordered with weatherproof flip lids. Fusing each outlet in the Series 3010 Multi-Tap, one piece outlet box permits gang operations with individual circuit protection. *Daniel Woodhead Co., Dept. RA, 15 N. Jefferson St., Chicago 6.*

New Microwave

A flexible "building block" 6 kmc microwave system which provides duplex multi-channel service is now available. When used with the transistorized B910 multiplexing equipment it will establish from 1 to 600 circuits with no penalty to the small user who must start with 12 channels or less. Combinations of the RF terminal equipment form repeater and junction stations. *Lynch Communications Systems Inc., Dept. RA, 695 Bryant St., San Francisco 7.*

Truck Flooring

Bruce Dura-Wood laminated hardwood flooring is made of selected oak. Electronic laminating processes and new waterproof glues provide full trailer or truck-length boards up to 12 in. in width. The flooring is available with shiplap, center-match, or special machining and is shipped precut to specifications. It is said to offer substantial savings in installation and maintenance. *E. L. Bruce Co., Dept. RA, 1648 Thomas, Memphis 1, Tenn.*

Aluminum Wash

Deck-Glo Aluminum Wash is a liquid combination, the solvent action of which dissolves grease and oil. Its detergent action separates grime and grit from metal, and its acid action removes stains and oxide films. The wash is nontoxic and non-flammable and is said to be harmless to painted signs, lettering, etc. It is available in 5- and 55-gallon plastic containers. *Sea-Air Chemical Corp., Dept., RA, 32-00 Borden Ave., Long Island City 1, N.Y.*

Towing Tractor

Mobiltow 40, a 4,000-lb draw-bar pull tractor is designed to push or pull freight, bales, barrels or cargo of any type on trackless trains at rail yards, shipping docks, warehouses and factories. A 58-brake-hp-engine with torque converter and 2-speed transmission gives forward and reverse speeds to 14 mph. Overall length is 95 in.; width, 64½ in.; wheel base, 62 in.; weight. 5,600 lb. *Minneapolis-Moline Co., Dept. RA, Hopkins, Minn.*

Graphite Lubricant

Mexacote is a quick drying, nontoxic graphite lubricant compounded from a blend of Mexican graphite and special oils. When thinned with turpentine, naphtha, or oleum spirits, the lubricant is easily applied. It was formulated for use on railroad equipment such as switch plates, springs, buffer assemblies and center plates. Packaged in standard one-gallon paint cans, net weight 11 lb. *The United States Graphite Co., Dept. RA, Saginaw, Mich.*

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures: Total 1960	1959	Deprec and Retirements	Maint. Equipment: Total 1960	1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Akron, Canton & Youngstown	Nov.	171	435	....	447	440	52	52	8	75	61	16	50	148	372	348	83.1	79.2	76	44	12	16
	11 mos.	171	5,293	....	5,432	5,406	612	640	62	854	815	173	508	1,729	4,218	4,111	77.7	76.0	1,214	731	355	354
Alabama, Tennessee & Northern	Nov.	214	255	....	261	255	55	50	6	11	139	6	4	79	153	333	58.7	130.6	108	19	10	—79
	11 mos.	214	2,543	....	2,583	3,106	601	548	71	138	250	62	49	924	1,752	1,859	67.8	59.8	831	119	101	154
Atchison, Topeka & Santa Fe	Nov.	12,968	43,288	2,686	51,042	51,028	6,491	5,748	819	9,988	9,509	2,614	1,417	18,822	39,156	37,352	76.7	73.2	11,887	6,740	4,178	5,254
	11 mos.	12,970	473,696	36,353	562,989	578,534	73,355	73,713	8,639	115,993	115,565	27,242	15,601	210,591	442,080	436,489	78.5	75.4	120,909	71,552	39,754	53,475
Atlanta & St. Andrews Bay	Nov.	81	260	....	263	362	26	36	3	25	27	8	7	70	150	171	57.1	47.1	113	43	36	69
	11 mos.	81	3,209	....	3,266	3,672	351	434	39	314	338	87	80	816	1,814	1,923	55.5	52.4	1,453	630	406	567
Atlanta & West Point	Nov.	93	223	14	287	312	36	50	8	47	50	14	18	129	253	272	88.1	87.0	34	17	—13	—4
	11 mos.	93	2,581	240	3,363	3,483	432	473	86	545	575	156	201	1,436	2,859	2,951	85.0	84.7	504	193	5	71
Western of Alabama	Nov.	133	260	13	311	332	47	40	10	55	59	19	22	139	286	275	91.7	82.8	26	24	—4	20
	11 mos.	133	2,930	222	3,581	3,833	493	548	107	634	652	209	237	1,518	3,132	3,164	87.5	82.6	449	365	51	208
Atlantic Coast Line	Nov.	5,572	10,815	845	12,797	13,349	1,486	1,541	178	2,528	2,480	742	504	5,226	10,512	10,475	82.1	78.5	2,285	950	962	627
	11 mos.	5,573	124,024	13,501	148,729	147,912	19,224	20,961	1,929	27,530	27,038	7,652	5,600	59,068	120,014	120,162	80.7	81.2	28,716	14,175	8,565	9,234
Baltimore & Ohio	Nov.	5,909	26,229	975	29,969	32,461	2,876	3,726	496	5,064	6,554	939	877	13,324	23,983	26,613	80.0	82.0	5,987	1,921	1,409	2,447
	11 mos.	5,909	317,125	14,501	361,454	360,107	38,306	39,874	5,592	68,257	66,224	11,691	10,319	158,133	296,081	292,176	81.9	81.1	65,373	26,531	13,681	25,035
Staten Island Rapid Transit	Nov.	29	160	92	260	271	65	71	13	47	42	1	2	156	299	301	115.3	111.0	—40	55	—116	—99
	11 mos.	29	1,780	998	2,860	3,068	668	622	139	506	436	14	24	1,688	3,236	3,171	113.1	103.3	375	562	—1,154	—887
Bangor & Aroostook	Nov.	596	909	16	990	981	188	229	24	248	227	110	32	290	837	851	84.6	86.7	153	112	124	—54
	11 mos.	597	11,673	213	12,426	11,975	2,927	2,869	242	2,996	3,012	1,203	373	3,764	10,939	10,888	88.0	90.9	1,487	1,125	1,647	1,354
Bessemer & Lake Erie	Nov.	203	1,406	....	1,387	2,329	350	705	25	769	523	141	32	395	1,734	1,800	125.0	77.3	—347	Cr.466	401	894
	11 mos.	203	21,595	....	22,375	18,230	3,003	3,286	280	7,156	6,879	1,109	401	5,157	17,726	16,884	79.2	92.6	4,649	4,866	3,777	2,609
Boston & Maine	Nov.	1,556	4,481	426	5,295	5,607	609	488	163	865	786	239	150	2,443	4,377	4,215	82.7	75.2	918	479	—21	371
	11 mos.	1,556	52,364	5,368	62,559	66,363	7,010	8,207	1,667	9,313	9,411	2,659	1,746	27,024	48,877	52,964	78.1	79.8	13,682	5,168	2,562	2,148
CPR Lines in Maine	Nov.	234	411	33	474	456	95	64	20	66	93	18	20	132	345	375	72.9	82.4	128	31	47	....
	11 mos.	234	6,222	487	7,019	7,163	1,053	1,358	223	930	1,159	193	221	1,888	4,414	4,988	62.9	69.6	2,604	365	1,398	1,000
Carolina & Northwestern	Nov.	284	307	....	313	399	35	38	7	31	31	21	6	79	164	174	52.5	43.6	149	Cr.12	112	145
	11 mos.	284	2,909	....	2,971	3,275	352	504	80	322	342	231	61	849	1,738	1,967	58.5	60.0	1,233	172	571	519
Central of Georgia	Nov.	1,745	3,234	98	3,535	3,473	484	400	46	669	752	192	163	1,448	2,954	2,924	83.6	84.2	581	268	266	334
	11 mos.	1,745	34,720	1,311	38,372	40,438	5,914	6,081	530	7,963	7,849	2,116	1,879	15,919	33,883	33,994	88.3	84.1	4,489	3,066	1,459	3,609
Central of New Jersey	Nov.	593	3,209	445	4,130	4,277	437	411	96	397	716	—145	72	2,090	3,222	3,415	78.0	79.9	908	484	72	229
	11 mos.	593	37,533	5,202	47,207	48,181	5,188	5,358	1,063	6,832	8,432	753	809	23,231	38,602	40,543	81.8	84.1	8,605	5,515	—847	614
Central Vermont	Nov.	375	709	25	798	870	139	160	19	109	105	9	20	336	662	672	83.0	77.2	136	55	—43	17
	11 mos.	375	7,630	541	8,903	9,634	2,205	2,402	199	1,229	1,186	102	207	3,790	7,817	8,104	87.8	84.1	1,086	620	—763	—420
Chesapeake & Ohio	Nov.	5,118	24,006	424	25,980	27,666	3,700	3,700	481	5,446	4,932	1,937	814	10,543	22,211	21,298	85.5	77.0	3,768	273	3,360	4,620
	11 mos.	5,122	295,883	5,491	318,526	317,676	38,000	36,430	5,148	58,180	55,551	20,933	9,211	118,446	242,124	235,963	76.0	74.3	76,402	33,814	45,748	50,555
Chicago & Eastern Illinois	Nov.	862	2,352	153	2,813	2,711	328	333	28	563	542	152	140	1,146	2,349	2,353	83.5	86.8	464	240	50	—75
	11 mos.	862	26,846	1,911	31,793	33,322	4,032	3,904	340	5,898	5,646	1,903	1,536	13,178	26,616	26,132	83.7	78.4	5,178	2,604	471	2,212
Chicago & Illinois Midland	Nov.	121	625	....	643	631	41	38	6	117	102	24	32	162	398	365	61.9	57.8	245	139	96	108
	11 mos.	121	6,685	....	6,843	6,780	529	452	92	1,236	1,106	256	334	1,722	4,349	4,000	63.6	50.9	2,494	1,481	968	1,119
Chicago & North Western	Nov.	10,726	15,018	1,349	17,433	17,680	3,519	2,800	506	3,358	3,192	1,148	659	7,665	16,380	15,636	94.0	88.4	1,053	1,482	—1,765	—287
	11 mos.	10,802	180,563	16,051	209,313	216,898	33,899	34,904	4,485	36,180	37,019	12,386	7,383	87,310	177,611	814,792	84.9	85.2	31,702	16,965	1,831	4,686
Chicago, Burlington & Quincy	Nov.	8,655	18,090	1,460	21,990	21,423	3,051	2,698	390	3,733	3,425	1,107	609	8,651	17,062	16,297	77.6	76.1	4,928	2,549	1,660	1,579
	11 mos.	8,660	186,600	19,563	230,538	240,458	31,565	33,360	4,436	42,770	45,138	12,098	6,929	94,219	187,156	192,843	81.2	80.2	43,382	23,330	15,312	17,235
Chicago Great Western	Nov.	1,469	2,236	5	2,470	2,594	405	343	45	400	360	131	118	934	1,935	1,879	78.3	72.4	535	169	145	191
	11 mos.	1,469	27,797	91	30,087	31,318	4,091	4,551	509	4,760	4,597	1,419	1,343	10,842	22,016	22,067	73.2	70.5	8,072	2,941	2,135	3,281
Chic., Milw., St. Paul & Pac	Nov.	10,596	15,381	1,072	18,550	17,755	2,392	2,486	421	3,019	3,268	901	517	7,595	14,798	15,447	79.8	87.0	3,752	1,620	1,016	45
	11 mos.	10,597	175,565	13,821	212,701	222,269	31,364	34,836	4,741	35,919	38,672	9,740	6,086	86,026	173,043	183,039	81.4	82.4	39,658	18,663	9,383	12,024
Chicago, Rock Island & Pacific	Nov.	7,541	12,587	1,249	15,552	15,965	1,825	1,867	321	2,673	3,029	483	505	7,127	13,074	13,305	84.1	83.3	2,478	811	282	596
	11 mos.	7,534	161,413	15,031	195,290	201,915	25,956	26,406	2,972	33,158	35,187	7,108	6,014	80,669	156,479	158,835	80.1	78.7	38,811	16,348	7,226	10,066
Clinchfield	Nov.	293	1,640	....	1,651	1,758	200	199	22	295	329	107	73	431	1,070	1,104	64.8	62.8	581	197	460	564
	11 mos.	293	18,160	1	18,261	19,289	2,110	2,391	245	3,570	3,545	1,167	747	4,777	11,972	12,213	65.6	63.3	6,289	2,239	5,516	6,407
Colorado & Southern	Nov.	712	980	59	1,215	1,230	188	155	23	207	207	81	33	583	1,084	998	89.2	81.1	131	81	47	106
	11 mos.	712	11,603	878	14,236	14,408	2,112	2,646	244	2,368	2,591	876	381	6,140	11,816	12,438	83.0	86.3	2,420	1,453	836	579
Ft. Worth & Denver	Nov.	1,362	2,144	100	2,522	2,534	445	265	33	238	337	46	72	906	1,799	1,733	71.4	68.4	722	221	143	163
	11 mos.	1,362	19,018	1,625	23,127	24,375	3,430	3,779	360	2,853	3,255	507	786	9,456	17,962	18,879	77.7	77.5	5,164	1,575	764	930
Colorado & Wyoming	Nov.	39	105	....	192	194	13	18	5	29	31	19	2	85	147	151	76.6	77.4	45	34	8	3
	11 mos.	39	1,774	....	3,277	2,904	222	194	28	330	355	144	23	1,298	2,072	1,757	63.2	60.5	1,205	762	392	381
Delaware & Hudson	Nov.	763	3,143	109	3,355	3,817	414	347	80	665	760	198	108	1,304	2,732	2,870	81.4	75.2	622	355	304	518
	11 mos.	763	37,108	1,405	39,939	42,179	4,757	4,579	709	8,444	7,738	2,185	1,178	15,127	32,422	32,227	81.2	76.4	7,517	3,952	4,203	5,700
Delaware, Lack. & Western	Nov.	See Erie-Lackawanna																				
	11 mos.																					
Denver & Rio Grande Western	Nov.	2,128	5,647	174	6,041	6,351	457	612	93	912	899	327	224	1,956	3,840	3,958	63.6	62.3	2,201	1,278	1,014	1,060
	11 mos.	2,128	64,765	2,754	69,831	68,921	7,527	7,987	1,063	10,609	10,335	3,602	2,592	22,589	46,737	46,570	66.9	67.6	23,094	13,280	9,702	10,052
Detroit & Toledo Shore Line	Nov.	50	525	....	558	523	43	53	4	67	69	24	21	219	367	380	65.8	72.6	191	66	34	20
	11 mos.	50	5,877	....	6,353	7,016	597	663	42	793	889	265	223	2,448	4,250	4,507	66.9	64.2	2,103	752	347	515
Detroit, Toledo & Ironton	Nov.	465	1,572	....	1,638	1,585	167	195	25	375	486	151	59	530	1,233	1,297	75.3	81.8	405	120	298	181
	11 mos.	465	17,799	....	18,824	19,477	2,477	2,696	307	4,621	4,512	1,662	636	5,538	14,337	14,312	76.2	73.5	4,487	1,339	3,143	3,601
Duluth, Miss. & Iron Range	Nov.	574	1,026	....	1,324	3,495	662	379	80	687	558	220	12	959	2,636	3,427	199.1	98.0	— 1,312	Cr.781	—560	—172
	11 mos.	575	39,498	13	46,424	29,357	6,103	5,199	869	7,384	6,246	2,321	149	14,257	31,130	26,121	67.1	89.0	15,293	9,333	5,851	224
Duluth, So. Shore & Atlantic	Nov.	544	417	2	452	527	87	89	5	104	92	26	32	183	429	473	95.0	89.8	23	40	3	—10
	11 mos.	544	5,873	26	6,258	6,412	1,178	1,251	135	1,205	1,205	288	362	2,257	5,267	5,386	84.2	84.0	991	465	383	452

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	1959	Operating Expenses: Maint. Way and Structures: Total 1960	1959	Deprec and Retirements	Maint. Equipment: Total 1960	1959	Deprec and Retirements	Traffic	Transportation	Total 1960	1959	Operating ratio 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income 1960	1959
Duluth, Winnipeg & Pacific	Nov.	175	414	....	417	496	79	100	4	56	54	1	8	172	329	350	78.9	70.5	88	40	—34	19
	11 mos.	175	5,038	8	5,084	5,397	1,208	1,246	62	614	646	12	80	1,988	4,008	4,096	78.8	75.9	1,076	473	—293	—92
Elgin, Joliet & Eastern	Nov.	205	2,578	....	3,273	2,731	235	229	29	656	434	130	45	1,281	2,539	2,359	77.6	86.4	735	203	521	—20
	11 mos.	205	34,414	....	45,396	38,933	3,749	3,022	315	9,559	7,186	1,383	502	17,630	35,364	30,174	77.9	77.5	10,032	5,583	2,170	1,737
Erie-Lackawanna*	Nov.	3,181	13,954	1,258	17,349	17,813	1,732	1,821	375	3,192	3,306	886	563	9,054	15,694	15,557	90.5	87.3	1,654	2,006	—1,476	—348
	11 mos.	3,180	167,982	14,488	204,001	206,279	21,515	21,781	4,190	35,378	34,980	9,792	6,145	101,945	177,877	177,539	87.2	86.1	26,124	21,019	—7,054	—1,176
Florida East Coast	Nov.	572	1,637	235	2,242	2,542	382	441	59	540	592	118	72	983	2,133	2,283	95.2	89.8	109	197	—284	—201
	11 mos.	572	20,294	4,274	27,424	29,882	3,538	4,457	492	5,395	6,003	1,280	870	10,974	22,724	25,193	82.9	84.3	4,700	2,247	121	—59
Georgia Railroad	Nov.	321	556	15	651	605	90	88	9	109	120	34	41	299	577	579	88.6	95.7	74	41	21	7
	11 mos.	321	5,886	178	7,004	7,294	906	1,031	94	1,223	1,352	367	439	3,214	6,211	6,660	88.7	91.3	793	452	416	361
Georgia & Florida	Nov.	321	246	....	252	265	75	56	3	61	36	10	24	103	282	220	111.9	83.5	—30	20	—70	11
	11 mos.	321	2,944	....	3,008	3,129	1,170	786	39	474	440	110	248	983	3,090	2,701	102.7	86.3	—82	229	—510	—32
Grand Trunk Western	Nov.	946	3,500	183	4,003	3,323	635	520	103	806	936	154	98	2,199	3,973	3,925	99.3	118.1	30	379	—743	—1,513
	11 mos.	950	41,482	2,328	48,122	51,903	7,541	7,568	730	9,138	10,038	1,305	1,026	23,830	44,205	47,528	91.9	91.6	3,917	4,393	—5,367	—6,721
Great Northern	Nov.	8,280	16,855	629	19,006	20,273	2,839	2,838	425	3,535	3,760	909	461	7,320	15,139	15,641	79.7	77.2	3,867	1,905	1,597	2,086
	11 mos.	8,293	203,396	8,370	228,349	233,614	36,704	36,989	3,550	42,117	43,738	9,770	6,139	83,014	179,049	180,959	78.4	77.5	49,300	27,587	17,376	20,489
Green Bay & Western	Nov.	219	356	....	364	335	40	27	5	29	40	8	27	114	233	242	63.9	72.3	131	66	35	16
	11 mos.	219	3,907	....	4,046	4,300	655	696	54	515	498	94	303	1,322	3,062	3,146	75.7	73.2	984	470	162	248
Gulf, Mobile & Ohio	Nov.	2,747	5,819	202	6,493	6,831	858	1,018	78	1,334	1,331	290	264	2,294	5,048	5,341	77.7	78.2	1,446	576	233	486
	11 mos.	2,747	63,098	2,515	70,526	75,135	9,381	10,162	850	14,581	14,917	3,229	3,074	25,156	55,842	57,734	79.2	76.8	14,684	6,440	3,539	5,012
Illinois Central	Nov.	6,500	17,748	1,720	21,872	22,580	2,957	3,094	826	3,886	4,090	737	653	8,746	17,324	17,572	79.2	77.8	4,548	2,253	1,383	1,538
	11 mos.	6,500	193,161	20,442	239,164	247,951	34,460	35,321	4,809	45,240	45,585	9,406	7,148	94,809	193,611	195,409	81.0	78.8	45,552	24,704	12,277	17,192
Illinois Terminal	Nov.	335	659	....	747	857	68	99	2	132	151	25	43	300	595	661	79.6	77.1	152	53	8	31
	11 mos.	335	7,766	....	8,721	9,773	842	1,159	32	1,538	1,994	293	502	3,563	7,052	8,179	80.9	83.7	1,669	463	127	18
Kansas City Southern	Nov.	891	2,805	65	3,223	3,737	229	239	48	457	561	113	96	1,099	1,996	2,165	61.9	57.9	1,227	431	538	658
	11 mos.	891	34,873	802	39,531	41,703	2,870	3,138	535	5,461	5,778	1,243	1,070	12,910	23,715	24,190	60.0	58.0	15,816	6,407	6,556	7,324
Kansas, Oklahoma & Gulf	Nov.	327	470	....	476	427	48	36	7	34	48	12	33	101	246	235	51.6	55.1	230	103	75	67
	11 mos.	327	4,746	....	4,794	4,976	427	633	83	405	389	135	365	1,190	2,718	2,750	56.7	55.3	2,076	840	743	795
Lake Superior & Ishpeming	Nov.	160	144	....	205	461	47	47	12	72	56	36	2	89	229	288	111.9	62.4	—24	9	—24	140
	11 mos.	160	3,756	....	4,874	3,573	651	844	133	846	678	391	24	1,248	2,979	2,822	61.1	79.0	1,895	1,201	815	423
Lehigh & Hudson River	Nov.	96	265	....	266	258	20	24	2	34	29	8	16	110	198	195	74.2	75.4	69	24	4	....
	11 mos.	96	2,930	....	2,944	3,033	285	312	27	340	318	92	178	1,167	2,172	2,217	73.8	73.1	771	272	82	91
Lehigh & New England	Nov.	177	237	....	239	491	38	51	6	189	185	37	8	149	430	507	179.4	103.2	—190	24	—126	78
	11 mos.	177	3,353	....	3,392	5,567	481	671	85	2,039	1,860	415	128	1,761	4,960	5,590	146.2	100.4	—1,568	297	—962	957
Lehigh Valley	Nov.	1,127	3,941	81	4,204	4,480	489	485	98	652	718	204	135	2,185	3,683	3,822	87.6	85.3	522	355	—123	53
	11 mos.	1,127	44,412	1,186	47,679	49,677	6,289	5,818	1,068	8,251	8,366	2,031	1,484	24,824	43,340	44,505	90.9	89.6	4,339	4,898	—3,029	—1,563
Long Island	Nov.	344	848	4,405	5,431	5,767	609	776	98	1,034	1,056	169	39	2,974	4,872	5,019	89.7	87.0	558	409	—2	85
	11 mos.	344	9,714	46,349	58,225	63,400	8,402	8,867	1,131	11,367	12,105	1,859	496	30,724	53,409	55,827	91.7	88.1	4,816	4,421	—1,790	840
Louisiana & Arkansas	Nov.	746	1,521	33	1,680	2,187	136	144	20	244	317	98	78	615	1,145	1,290	68.1	59.0	535	206	232	337
	11 mos.	746	20,284	443	22,000	23,380	2,034	2,076	253	3,241	3,354	1,075	875	7,354	14,357	14,628	65.3	62.6	7,643	3,850	2,561	3,111
Louisville & Nashville	Nov.	5,684	17,168	534	19,223	18,920	2,346	2,078	329	3,870	3,756	1,201	507	7,379	15,048	14,501	78.3	76.6	4,175	2,928	1,948	1,901
	11 mos.	5,684	185,028	7,592	207,997	208,817	26,252	27,712	3,540	44,115	42,033	12,830	5,621	83,190	169,843	167,244	81.7	80.1	38,154	27,076	15,498	16,735
Maine Central	Nov.	936	1,709	....	1,817	1,976	332	370	30	414	346	80	28	699	1,592	1,590	87.6	80.5	225	....	172	173
	11 mos.	936	20,530	205	22,116	22,512	3,897	4,123	318	4,123	4,095	905	336	8,020	17,620	18,401	79.7	81.7	4,496	1,870	1,790	1,575
Minneapolis & St. Louis	Nov.	Merged Nov. 1, 1960 with Chicago and North Western																				
	11 mos.																					
Minn., Northfield & Southern	Nov.	77	285	....	312	334	32	24	3	32	37	13	36	81	217	219	69.6	65.5	95	62	32	36
	11 mos.	77	3,251	....	3,461	3,997	299	266	28	424	446	141	387	937	2,456	2,502	70.9	62.6	1,006	632	321	536
Minn., St. Paul & S. Ste. Marie	Nov.	3,221	2,886	24	3,078	3,253	728	717	120	666	667	145	104	1,288	3,008	3,031	97.7	93.2	70	56	—176	41
	11 mos.	3,222	35,590	541	37,930	39,222	6,330	8,071	633	6,866	7,458	1,577	1,200	15,011	31,834	34,622	83.9	88.3	6,097	3,056	1,872	1,620
Missouri-Illinois	Nov.	172	434	....	441	511	58	37	4	85	73	40	14	120	290	264	65.9	51.7	150	132	73	136
	11 mos.	172	4,965	....	5,005	5,198	474	485	56	992	950	440	154	1,440	3,204	3,153	64.0	60.6	1,801	1,506	814	1,128
M-K-T Lines	Nov.	2,892	3,957	74	4,490	4,392	518	447	85	739	850	263	178	1,764	3,404	3,293	75.8	75.0	1,086	326	266	318
	11 mos.	2,914	47,923	844	53,077	53,990	5,931	5,772	954	10,241	11,172	2,886	1,928	19,732	40,081	40,400	75.5	74.8	12,995	3,816	3,501	3,703
Missouri Pacific	Nov.	9,406	21,247	754	24,526	23,683	3,221	3,294	343	4,325	4,136	1,166	753	9,314	18,646	18,542	76.0	78.3	5,883	1,929	2,445	2,242
	11 mos.	9,411	237,408	10,312	274,479	277,904	37,364	38,104	3,582	47,815	47,840	11,818	8,008	105,399	210,161	211,702	76.6	76.2	64,318	21,365	28,957	29,569
Monon	Nov.	541	1,479	25	1,596	1,707	235	267	20	301	313	76	108	617	1,358	1,453	85.1	85.1	238	117	55	84
	11 mos.	541	15,778	297	17,089	18,490	2,647	2,701	236	3,092	3,339	836	1,133	7,010	14,994	15,686	87.7	84.8	2,094	1,300	—208	1,005
Monongahela	Nov.	177	400	....	402	420	84	70	11	56	54	11	1	121	274	287	68.1	68.4	128	19	50	67
	11 mos.	177	5,913	....	5,941	4,768	826	749	131	579	601	120	10	1,443	3,045	3,365	51.2	70.6	2,897	421	1,859	630
New York Central	Nov.	10,368	39,593	4,981	52,537	54,603	5,149	5,381	1,085	9,500	11,100	2,449	1,000	24,985	43,613	46,521	83.0	85.2	8,924	5,678	1,027	308
	11 mos.	10,368	469,691	60,874	622,002	626,641	67,430	65,858	12,010	121,050	120,100	26,865	11,518	290,789	523,057	526,528	84.1	84.0	98,945	62,310	12,586	18,425
Pittsburgh & Lake Erie	Nov.	221	2,006	29	2,133	2,102	375	307	33	994	763	326	63	910	2,551	2,260	119.6	107.5	—418	202	577	633
	11 mos.	220	29,778	363	31,480	27,160	4,484	3,958	588	10,282	9,236	3,652	692	11,686	29,446	27,253	93.5	100.3	2,034	5,290	8,779	7,023
New York, Chic. & St. Louis	Nov.	2,170	10,782	88	11,218	12,334	1,245	1,247	120	1,629	1,931	270	346	4,328	8,069	8,581	71.9	69.6	3,148	1,220	995	1,673
	11 mos.	2,170	132,155	1,316	138,688	136,483	14,829	14,872	1,697	21,647	22,299	4,781	3,954	53,158	99,083	97,924	71.4	71.8	39,605	18,141	13,867	15,832
New York, New Haven & Hart	Nov.	1,742	6,008	3,643	11,175	11,242	1,376	1,575	201	1,911	1,795	509	237	5,558	9,919	10,354	88.8	92.1	1,256	1,004	—1,097	—1,487
	11 mos.	1,753	66,055	40,148	123,061	131,860	15,596	16,430	2,839	20,928	19,598	5,242	2,624	62,117	110,956	113,620	90.2	86.2	12,105	11,231	—15,228	—8,146
New York Connecting	Nov.	21	229	....	255	280	59	87	25	14	12	....	....	78	155	183	61.0	65.1	100	100	—34	—20
	11 mos.	21	2,623	....	2,953	3,544	768	805	279	176	146	....	....	910	1,897	1,938	64.2	54.7	1,056	1,047	—299	370
New York, Sus. & Western	Nov.	97	302	5	328	358	45	17	6	47	53	8	8	147	280	285	85.1	80.0	49	33	—31	—10
	11 mos.	99	3,396	127	3,718	3,700	460	436	75	550	579	112	100	1,666	3,125	3,333	84.1	90.1	592	364	—245	—437

*Includes figures for all periods for Delaware, Lackawanna & Western, with which Erie was merged effective Oct. 17, 1960.

(Continued on next page)

a RAILWAY AGE Service Page

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1960

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1960	Total (inc. misc.) 1959	Operating Expenses: Maint. Way and Structures: Total 1960	Total 1959	Deprec and Retirements	Maint. Equipment: Total 1960	Total 1959	Deprec. and Retirements	Traffic	Transportation	Total 1960	Total 1959	Operating ratio: 1960	1959	Net from railway operation	Railway tax accruals	Net Railway operating income: 1960	1959
Norfolk & Western	Nov.	2,744	17,064	191	18,138	19,511	2,067	2,271	404	2,996	3,035	1,483	399	4,899	11,307	11,954	62.3	61.3	6,831	2,569	5,432	6,099
	11 mos.	2,743	211,359	2,262	223,111	225,137	24,507	24,840	4,564	35,909	38,327	16,044	4,473	59,209	133,242	137,527	59.7	61.1	89,869	44,185	60,836	59,574
Norfolk Southern	Nov.	592	741	....	758	835	128	183	14	128	124	40	53	295	673	668	88.9	80.0	85	57	—30	66
	11 mos.	592	8,444	....	8,594	9,064	1,844	2,078	157	1,464	1,463	441	551	2,971	7,569	7,733	88.1	85.3	1,025	604	146	376
Northern Pacific	Nov.	6,799	12,214	469	13,850	13,770	1,665	1,576	230	2,581	2,313	819	435	5,893	11,484	10,868	82.9	78.9	2,366	1,865	1,170	1,266
	11 mos.	6,817	144,422	5,558	161,878	169,285	25,691	25,660	3,827	30,447	29,342	8,995	4,683	65,656	136,698	134,980	84.4	79.7	25,179	18,968	9,368	13,756
Northwestern Pacific	Nov.	328	744	....	753	1,020	239	218	69	72	75	3	7	257	600	635	79.7	62.3	153	43	—77	76
	11 mos.	328	10,624	5	10,700	12,923	2,251	2,349	300	832	894	29	81	3,297	6,749	7,337	63.1	56.8	3,951	1,173	282	1,244
Pacific Electric	Nov.	338	974	....	1,135	971	157	207	23	62	55	4	22	512	849	898	74.8	92.6	286	145	—18	—213
	11 mos.	348	10,938	....	12,522	12,716	1,947	2,045	258	459	598	40	239	5,853	9,609	10,231	76.7	80.5	2,913	1,569	—536	—509
Pennsylvania	Nov.	9,873	50,118	8,001	67,822	74,776	5,986	6,904	1,486	12,213	14,011	3,050	1,121	30,987	54,203	58,205	79.9	77.8	13,619	5,772	2,834	5,085
	11 mos.	9,883	594,401	89,994	780,867	810,853	78,624	78,886	16,206	148,069	162,010	32,755	13,052	356,450	641,448	665,859	82.1	82.1	139,420	65,025	9,800	26,691
Penn.-Reading S. S. Lines	Nov.	338	499	39	557	635	154	166	25	120	130	26	6	445	804	826	144.4	130.0	—247	71	—468	—441
	11 mos.	338	5,801	854	6,899	7,450	1,851	2,337	281	1,320	1,440	283	82	5,227	9,184	9,823	133.1	131.9	—2,284	809	—4,962	—4,940
Piedmont & Northern	Nov.	126	472	....	481	562	56	55	5	34	41	10	34	97	261	270	54.4	48.0	219	104	60	85
	11 mos.	126	5,105	....	5,227	5,255	539	486	57	405	389	108	360	1,034	2,776	2,631	53.1	50.1	2,451	1,186	673	732
Pittsburgh & West Virginia	Nov.	132	474	....	477	693	156	125	25	136	149	45	65	195	613	600	128.5	86.7	—136	Cr.94	—55	53
	11 mos.	132	7,160	....	7,222	7,147	1,654	1,682	285	1,613	1,716	492	771	2,248	6,957	7,174	96.3	100.4	265	Cr.67	260	202
Reading	Nov.	1,300	7,117	477	8,388	9,011	1,069	1,049	198	1,605	1,864	479	216	3,698	7,037	7,567	83.9	84.0	1,351	691	550	701
	11 mos.	1,303	85,456	5,378	97,824	97,251	12,037	12,285	2,140	18,799	18,892	5,279	2,140	43,100	81,309	82,050	83.1	84.4	16,514	6,789	6,194	6,974
Richmond, Fred. & Potomac	Nov.	118	1,097	287	1,747	1,851	192	148	30	301	310	66	28	660	1,302	1,274	74.5	68.8	445	286	71	127
	11 mos.	118	13,615	4,420	21,707	21,699	1,889	1,659	327	3,263	3,212	714	309	7,453	14,483	14,510	66.7	66.9	7,224	4,073	2,085	2,093
Rutland	Nov.	391	264	....	284	381	44	72	9	53	62	18	23	124	268	345	94.5	90.6	16	26	3	—1
	11 mos.	391	3,056	....	3,301	4,225	717	842	97	598	653	200	277	1,466	3,343	3,854	101.3	91.2	—42	317	—363	—8
St. Louis-San Francisco	Nov.	4,546	9,153	170	10,091	10,229	1,496	1,441	167	1,591	1,725	614	358	3,893	7,776	8,040	77.1	78.6	2,315	729	1,295	1,103
	11 mos.	4,549	98,537	2,034	109,336	110,781	16,915	16,891	1,974	17,774	18,785	6,614	3,928	43,320	88,513	89,618	81.0	80.9	20,823	7,836	10,402	10,677
St. Louis-S. F. & Texas	Nov.	143	367	....	383	419	33	19	4	21	22	1	22	137	225	222	58.8	53.0	158	60	38	47
	11 mos.	143	4,546	2	4,725	4,720	342	297	46	274	299	13	244	1,638	2,643	2,648	55.9	56.1	2,082	638	695	585
St. Louis Southwestern Lines	Nov.	1,554	5,089	....	5,161	4,872	476	522	85	675	778	232	187	1,828	3,350	3,496	64.9	71.8	1,810	922	708	616
	11 mos.	1,554	58,997	1	59,752	60,050	6,242	6,386	922	7,673	7,590	2,406	2,012	19,711	37,682	38,077	63.1	63.4	22,070	10,045	9,850	9,439
Savannah & Atlanta	Nov.	144	324	....	338	314	89	51	2	63	67	19	16	118	302	262	89.4	83.3	36	21	—1	26
	11 mos.	144	3,836	....	3,995	3,746	668	562	20	741	704	213	181	1,292	3,028	2,861	75.8	76.4	967	417	375	428
Seaboard Air Line	Nov.	4,135	10,373	890	12,370	13,344	1,596	1,617	352	2,432	2,663	765	466	4,807	9,977	10,422	80.7	78.1	2,393	1,061	1,089	1,343
	11 mos.	4,145	119,817	12,744	144,186	146,731	18,574	18,636	2,547	28,018	27,128	8,191	5,206	53,804	113,184	111,652	78.5	76.1	31,002	13,696	14,253	17,298
Southern Railway	Nov.	6,267	19,621	640	22,053	21,904	2,387	2,451	542	3,421	3,394	1,019	523	7,110	14,757	14,566	66.9	66.5	7,296	2,816	3,440	3,431
	11 mos.	6,267	210,750	9,655	238,867	246,816	28,972	30,893	4,069	41,592	41,260	11,197	5,680	78,288	167,930	169,435	70.3	68.6	70,938	30,359	32,566	35,586
Alabama Great Southern	Nov.	328	1,061	28	1,247	1,293	233	225	40	287	259	84	43	547	1,222	1,130	98.0	87.4	25	84	—79	17
	11 mos.	328	12,183	458	14,261	15,083	2,680	2,563	408	3,296	3,443	904	463	5,510	13,093	12,996	91.8	86.2	1,168	979	—381	643
Cinn., N. O. & Tex. Pac	Nov.	337	2,704	60	3,010	2,869	445	674	102	668	629	267	85	850	2,260	2,440	75.1	85.0	751	314	583	380
	11 mos.	337	30,179	917	33,607	36,237	6,143	6,410	914	7,962	7,711	2,748	929	9,766	26,887	26,826	80.0	74.0	6,720	3,205	5,213	6,520
Georgia Southern & Florida	Nov.	397	652	22	762	694	72	87	12	65	72	11	23	320	538	494	70.6	71.2	224	36	15	25
	11 mos.	397	6,850	365	8,135	9,244	1,631	1,300	125	782	947	115	248	2,943	6,228	6,132	76.6	66.3	1,907	468	—267	598
New Orleans & Northeastern	Nov.	203	631	21	732	841	248	221	57	207	185	101	28	251	814	762	111.1	90.6	—82	79	—132	48
	11 mos.	203	8,031	345	9,183	10,388	2,226	2,206	316	2,347	2,185	1,034	303	2,798	8,502	8,391	92.6	80.8	682	934	222	996
Southern Pacific	Nov.	7,954	36,597	1,743	41,180	39,968	5,030	5,320	607	9,264	10,255	2,595	774	16,303	33,583	34,551	81.6	86.4	7,597	4,841	2,862	1,724
	11 mos.	8,001	444,426	23,608	495,406	505,476	57,190	59,097	6,826	110,624	112,156	28,362	8,448	189,408	389,258	394,680	78.6	78.1	106,148	55,705	44,386	43,939
Texas & New Orleans	Nov.	4,091	9,685	232	10,586	10,719	1,688	2,069	221	1,851	1,719	206	252	3,909	8,297	8,780	78.4	81.9	2,288	819	215	226
	11 mos.	4,092	110,724	3,216	120,770	128,667	19,209	21,732	1,805	18,921	18,679	2,223	2,787	45,009	92,549	97,198	76.6	75.5	28,221	10,303	4,285	6,751
Spokane International	Nov.	150	238	....	247	263	45	69	4	21	31	9	4	68	149	181	60.3	68.8	98	22	50	—1
	11 mos.	150	3,018	....	3,118	3,247	579	557	44	286	291	107	46	788	1,808	1,840	58.0	56.7	1,310	625	376	476
Spokane, Portland & Seattle	Nov.	936	2,243	55	2,473	2,724	332	440	66	413	448	129	32	1,075	1,049	2,214	78.4	81.3	533	239	193	669
	11 mos.	936	27,065	907	29,995	31,503	4,699	4,929	658	5,176	5,150	1,419	389	11,560	23,150	23,283	77.2	73.9	6,845	2,903	2,723	4,617
Tennessee Central	Nov.	284	311	....	347	360	52	45	5	59	56	21	15	125	276	261	79.5	72.4	71	25	1	28
	11 mos.	284	3,475	2	3,809	3,821	518	485	58	605	564	234	167	1,357	2,901	2,832	76.2	74.1	908	281	148	276
Texas & Pacific	Nov.	1,828	4,895	240	5,810	5,961	571	830	96	854	1,112	290	228	2,414	4,443	5,019	76.5	84.2	1,367	515	456	289
	11 mos.	1,828	55,368	3,497	65,807	67,883	6,927	9,103	1,091	11,309	11,691	3,110	2,554	27,547	52,489	55,289	79.8	81.4	13,317	5,279	3,561	3,541
Texas Mexican	Nov.	161	249	....	290	249	93	59	7	35	30	11	13	86	252	211	86.8	84.5	38	14	—3	—6
	11 mos.	161	2,755	....	3,075	3,326	580	664	69	383	365	126	139	925	2,289	2,415	74.4	72.6	786	359	112	132
Toledo Peoria & Western	Nov.	239	562	....	585	604	57	56	7	53	56	13	51	175	380	385	65.0	63.8	204	93	48	59
	11 mos.	239	6,450	....	6,715	7,164	774	846	76	551	570	148	562	1,899	4,235	4,339	63.0	60.6	2,480	1,076	645	839
Union Pacific	Nov.	9,727	36,952	1,723	42,319	41,020	4,502	4,389	536	7,050	7,315	2,543	1,083	14,505	29,245	29,906	69.1	72.9	13,074	7,358	3,842	3,304
	11 mos.	9,742	395,304	25,006	454,124	471,675	49,249	56,036	6,895	82,175	87,223	26,780	12,845	160,862	329,889	347,712	72.6	73.7	124,235	73,097	30,246	34,351
Wabash	Nov.	2,413	7,726	302	9,024	9,311	870	1,013	124	1,183	1,219	416	337	4,253	7,099	7,474	78.7	80.3	1,925	638	444	373
	11 mos.	2,413	89,025	4,263	103,930	110,210	10,151	13,036	1,311	14,490	15,605	5,143	3,611	48,216	81,506	88,554	78.4	80.4	22,423	7,512	5,878	5,602
Ann Arbor	Nov.	294	690	....	697	682	67	76	5	130	161	44	23	316	559	657	80.1	96.4	139	52	69	—54
	11 mos.	294	7,550	1	7,692	8,066	727	969	64	1,704	1,775	486	296	3,650	6,625	7,380	86.1	91.5	1,067	593	263	—188
Western Maryland	Nov.	841	3,164	....	3,320	3,580	622	666	58	774	821	301	131	1,251	2,977	3,023	89.7	84.5	343	182	418	592
	11 mos.	842	41,390	....	43,021	40,267	6,570	6,023	676	9,117	8,770	3,370	1,381	14,503	33,929	32,223	78.9	80.0	9,092	5,067	7,200	7,234
Western Pacific	Nov.	1,188	3,789	117	4,001	3,973	540	582	87	658	693	231	246	1,546	3,298	3,518	82.4	88.6	703	270	321	224
	11 mos.	1,188	44,883	2,204	48,313	49,073	6,680	6,129	905	7,557	7,615	2,412	2,740	17,754	38,376	37,656	79.4	76.7	9,937	4,201	4,828	5,669
Wisconsin Central	Nov.	1,031	1,986	18	2,246	2,401	294	344	44	433	338	110	109	1,197	2,201	2,095	98.0	87.3	45	202	—424	—121
	11 mos.	1,031	27,652	265	30,109	29,681	3,593	4,086	495	4,766	4,767	1,206	1,164	13,231	24,572	24,555	81.6	82.7	5,537	2,211	833	807

People in the News

ARCATA & MAD RIVER. — **John E. Leavitt,** freight agent, Blue Lake, Calif., appointed operation and traffic agent there and his former position abolished. **James S. Liston** named accountant.

ASSOCIATION OF AMERICAN RAILROADS.—Gregory S. Prince, vice president and general counsel, Washington, D.C., elected to the newly created post of executive vice president and general counsel.

ATLANTIC COAST LINE.—H. F. Hock, commercial agent, Sumter, S. C., appointed division freight agent, Charleston, S. C. **O. L. Woodward,** commercial agent, Chattanooga, Tenn., named general agent there. **A. R. Howard** appointed perishable agent, Jacksonville, Fla. **Charles K. Brown** appointed industrial geologist, Jacksonville.

BALTIMORE & OHIO.—Charles E. Bertrand, assistant vice president—operation and maintenance, Baltimore, Md., promoted to vice president—operation and maintenance, succeeding **William C. Baker,** retired.

BURLINGTON—G. F. Reynolds, assistant general freight agent, Chicago, appointed to the newly created position of general freight agent. **F. C. Reisse,** general agent, New York, appointed general freight agent there.

CANADIAN PACIFIC.—G. G. Sayer, assistant superintendent, Smiths Falls, Ont., promoted to superintendent, Farnham division, succeeding the late **T. E. Wheeler. W. W. Stinson,** assistant superintendent—piggyback services, Montreal, named assistant superintendent, Smiths Falls division, succeeding **D. W. Alexander,** transferred.

R. R. Morrish, division engineer, Schreiber, Ont., transferred to the Smiths Falls division, succeeding **P. C. Fuller,** promoted.

CENTRAL OF GEORGIA.—E. C. Jones, general freight traffic manager, Savannah, Ga., appointed chief traffic officer, succeeding **H. C. White,** who retired Feb. 1. **E. J. McCaffrey** appointed general freight traffic manager—rates, and his former position of assistant general freight traffic manager abolished. **G. E. Johnston,** freight traffic manager—sales, succeeds Mr. Jones as general freight traffic manager—sales. **W. F. Leach,** assistant freight traffic manager, Macon, succeeds Mr. Johnston. **E. B. Shearouse,** general agent, Washington, D. C., appointed assistant freight traffic manager, Savannah, succeeding **J. F. McKemie,** transferred to Macon, Ga., to replace Mr. Leach. **T. J. Wren** and **C. J. Toshach,** assistant general freight agents, Savannah, promoted to general freight agents there and **J. D. Hinely** named assistant general freight agent. **C. A. Price** appointed assistant Florida freight agent, Miami, Fla., succeeding **R. E. Summerell,** named general agent, Richmond, Va. Mr. Summerell succeeds **C. H. Smith,** named general agent, Washington, D.C., succeeding Mr. Shearouse.

CHESAPEAKE & OHIO.—Anthony L. Agardi, chief clerk, office of the president, Cleveland, appointed staff assistant there. **Sergei G. Guins,** assistant to director of research, named assistant director of research, Cleveland.

Maynard A. D'Aoust, coal traffic agent, appointed assistant general coal traffic agent, Detroit. **Raymond L. Dickinson,** assistant coal traffic agent, Grand Rapids, Mich., named coal traffic agent, Toledo, succeeding **W. H. Mortimer,** retired. **Bernard A. Stack,** coal traffic sales trainee, appointed assistant coal traffic agent, Grand Rapids. **H. E. Middlekauff** appointed chairman of the Rules Committee, Huntington, W. Va., succeeding the late **J. W. Knapp, Jr. R. B. Isphording** appointed assistant purchasing agent, Cleveland. Abolished position of member of Rules Committee formerly held by Mr. Middlekauff.

DETROIT & TOLEDO SHORE LINE—Harry A. Sanders elected president, succeeding **Francis A. Gaffney.** Mr. Sanders is also vice president and general manager, Grand Trunk Western, Detroit, having succeeded Mr. Gaffney, named vice president, highway services, Canadian National Systems (RA, Dec. 19/26, 1960, p. 50).

ELGIN, JOLIET & EASTERN.—Robert A. Adamson appointed terminal trainmaster, Joliet, Ill.

FRISCO TRANSPORTATION CO.—L. W. Menk elected president, St. Louis, effective Feb. 1.

GRAND TRUNK WESTERN.—R. G. Maughan, assistant chief engineer, Detroit, Mich., appointed chief engineer there, succeeding **C. J. Morris,** promoted.

MISSOURI-KANSAS-TEXAS.—Wallace G. Sheridan and **Leon J. Vorndran** appointed sales representatives, San Antonio, Tex. and Philadelphia, respectively.

MISSOURI PACIFIC.—Harold M. Hoffmeister, general purchasing agent, elected vice president. Mr. Hoffmeister will continue to direct the purchasing department, and in addition, will have responsibility for administration of the electronic data processing and methods and procedures program.

T. W. Faulk, trainmaster, Palestine, Tex., transferred to Freeport, Tex., succeeding **B. E. Watson,** retired. **J. W. Dunlap,** trainmaster, Poplar Bluff, Mo., succeeds Mr. Faulk, and in turn is succeeded by **R. L. Caldwell. W. E. Butler** named division trainmaster, Osawatomie, Kan., to replace **W. V. Jones,** retired.

Arthur A. Weiss appointed general freight agent-divisions, St. Louis, succeeding **Oliver C. Weber,** who retired Jan. 31. **J. N. Sanders** named manager-foreign and perishable traffic, St. Louis. **Earland Sandstrum,** general freight agent, Houston, promoted to assistant traffic manager there, assuming duties formerly assigned to **J. C. Selover,** advanced to traffic manager, Kansas City, Mo. Mr. Selover replaces **William H. A. Turner,** named executive general agent, Kansas City, succeeding **F. E. Pennington,** retired. Mr. Sandstrum's successor is **Franklin K. Massey,** general agent, Houston, who in turn is replaced by **Robert A. Sheldon, Jr.,** commercial agent, Eugene, Ore. **Joseph C. Hullihan,** traffic representative, Sacramento, Cal., named general agent, Atchison, Kan., replacing **Robert D. Pierce, Sr.,** division freight and passenger agent, retired. **Harold W. Kassling,** executive general agent, Harlingen, Tex., promoted to assistant traffic manager, Chicago, succeeding **Guy L. Harmon,** transferred to Portland, Ore., to replace **Enoch Y. Butler,** general agent, retired. **Raymond T. Watt,** perishable traffic manager, St. Louis, succeeds Mr. Kassling. **Charles J. Somervell,** commercial agent, Birmingham, Ala., advanced to general agent, Helena, Ark., succeeding **James H. Dwyer,** retired. **Thomas S. Glass,** general agent, freight department, Memphis, Tenn., named assistant traffic manager there, to succeed **John A. Fetz,** retired. Mr. Glass' successor is **Simeon M. Carter, Jr.,** rate analyst, traffic analysis division, St. Louis. **Frank L. Evans,** general agent, Beaumont, Tex., promoted to executive general agent, San Antonio, succeeding **W. E. Babel,** retired. **Ellis E. Manuel,** commercial agent, Lake Charles, La., replaces Mr. Evans. **William U. Fuller,** district passenger and freight agent, Memphis, advanced to general agent passenger depart-

Gregory S. Prince
AAR

Charles E. Bertrand
B&O

Harold M. Hoffmeister
MP

H. A. Peterson
NP

E. M. Stevenson
NP

John J. Newbauer, Jr.
RF&P

Kenneth D. Hestes
T&P

R. Shelton Goode
T&P

ment, Austin, Tex., succeeding **A. R. Fox.**

NEW HAVEN.—A. Gerdes Kubach, first vice president, appointed executive vice president, New Haven, Conn.

NEW YORK CENTRAL.—Ernest C. Nickerson, vice president—passenger and merchandise, New York, transferred to the executive department. Mr. Nickerson will retain responsibility for passenger and merchandise services and will be given additional responsibilities at the direction of the president.

Malcolm P. Richards, director of purchases, New York, appointed vice president—purchases and stores, succeeding the late **Henry R. McCarthy.**

NORTHERN PACIFIC.—H. A. Peterson, freight traffic manager, and **E. M. Stevenson,** eastern freight traffic manager, named to the newly created positions of assistant vice president-traffic, with headquarters at St. Paul. Mr. Peterson will supervise freight sales and service in the central, eastern and southern states, and Mr. Stevenson will supervise sales and service in on-line territory between the Twin Cities and the North Pacific Coast and in western off-line territory.

READING.—H. B. Gauntt, general manager, Reading, Pa., appointed transportation manager, Philadelphia, and his former position abolished. Communications heretofore addressed to the general manager should be sent to the vice president—operation and maintenance.

RICHMOND, FREDERICKSBURG & POTOMAC.—John J. Newbauer, Jr., assistant secretary and assistant treasurer, appointed also administrative assistant to the president, effective Feb. 1.

SEABOARD.—J. C. Parrish, general car distributor, appointed assistant to the manager, trailer-on-flatcar service, Richmond, Va.

W. N. Goff, commercial agent, Fort Pierce, Fla., appointed general agent, Belle Glade, Fla., succeeding **H. O. Carlton,** who retires Feb. 27.

SOUTHERN.—John B. Welch, director of taxes, appointed assistant vice president, Department of Finance and Taxation, with headquarters remaining in Washington, D.C.

George E. Green, general agent, Rochester, N.Y., appointed general eastern freight agent, New York, succeeding **Challen E. Caskie,** who was named assistant freight traffic manager, Richmond, Va., last September.

James C. Cook, industrial agent, Atlanta, Ga., appointed general industrial agent, Birmingham, Ala., succeeding **J. L. Townshend,** who was recently promoted to assistant vice president, Washington, D. C.

Haviland Hobbs, director of real estate and conveyancing, for the system, appointed assistant vice president, Department of Finance and Taxation, Washington.

R. W. Ellerman, assistant freight traffic manager, Atlanta, Ga., promoted to freight traffic manager—rates and divisions, Washington, D.C.

TEXAS & PACIFIC.—L. T. McIntyre, treasurer, retired. Effective Feb. 1, **R. Shelton Goode,** corporate secretary, elected secretary and treasurer.

Jack Edward Large, assistant western general sales manager, appointed western general sales manager, Los Angeles, effective Feb. 1, succeeding **A. N. Overall,** retiring. Effective Feb. 1, **George L. Brooks,** district manager-freight sales, El Paso, Tex., named regional manager-freight sales there, to replace **A. C. Tanksley,** retiring.

Effective Feb. 1, **William T. Bruegmann** appointed vice president and general manager of Merchants Cold Storage Co., T&P affiliate, succeeding **Carl V. Deakins,** retiring.

Kenneth D. Hestes, superintendent, Western division, Fort Worth, Tex., appointed general superintendent transportation, Dallas, to succeed **Wilbur C. Foster,** promoted (RA, Jan. 23, p. 33). **Raymond H. Blassingame,** assistant superintendent, Eastern division in charge of the Louisiana section, replaces Mr. Hestes.

Howard Crouse, purchasing agent, named manager, purchases and stores and his former position abolished. Manager of stores position abolished.

WESTERN MARYLAND.—W. Cecil Sinners, general freight agent, Baltimore, Md., appointed assistant freight traffic manager there, succeeding **Albert F. Forster,** who retired Dec. 31. **Carl N. Collins** named general freight agent, **Kenneth E. Diehl,** assistant general freight agent, and **Phillip D. Baer,** assistant to general freight agent.

John Krznaric, of the WM's Chicago staff, appointed assistant to foreign traffic manager, Baltimore.

Supply Trade

Missco Transportation, Inc. has announced acquisition of the railroad seating division, **Dwight Austin Products Co.,** Kent, Ohio.

Donald Horne, railroad sales representative for **Chipman Chemical Co.,** has been appointed manager of a newly established sales district (Minnesota, North and South Dakota and part of Wisconsin), with headquarters at 786 North St. Albans Street, St. Paul, Minn. Mr. Horne will be in charge of agricultural, industrial and railroad sales.

Vapor Heating Corp. has announced the following retirements: **Gustav N. Rundquist,** general superintendent; **Raymond E. Mattern,** general foreman, and **Joseph F. Gabriel,** sales and service representative of Vapor to the Electro-Motive Division of General Motors.

Wesley L. Kubik, vice president, manufacturing, **Athey Products Corp.,** has retired. Mr. Kubik will be retained in an advisory capacity as a production consultant for a year. **Keith V. Gilbert** has been named assistant to the sales manager.

George W. Baughman, vice president, **Union Switch & Signal Division of Westinghouse Air Brake Co.,** has been appointed to the president's staff at Pittsburgh, Pa.

Robert J. Moe and **John W. Rapp** have been appointed district managers, **Tamper, Inc.,** with headquarters at Minneapolis and St. Louis, respectively. **W. A. Blackford** appointed district representative, San Francisco.

Gregory G. Gagarin has been appointed to the newly created position of assistant vice president—foreign operations, **W. H. Miner, Inc.,** at Washington, D. C. **Kenneth R. McCormac** has been appointed office and personnel manager.

Harold Harris, vice president of **Enterprise Railway Equipment Co.,** Chicago, has been named executive vice president.

W. R. McQuaid, Jr., of Jacksonville, Fla., and **Grid Sales, Inc.** of Baltimore, Md., have been appointed sales agents for railroad tooling by **Vascoloy-Ramet Corp.** of Waukegan, Ill.

A newly completed plant in Asheville, N. C., has been acquired under a long-term lease by **SKF Industries, Inc.** to aid increased production and sales of the 'Expediter' railroad bearing and provide improved service to the railroads in the Southern states.

The Atlantic Trailer Corp., Berlin, Md., has appointed the **Ralph W. Payne Co.** of Washington, D. C., as its representative to the railroads of the southeastern region of the United States.

Ralph D. Brizzolara, vice president of **American Steel Foundries,** Chicago, retired Dec. 31.

Charles E. Wolfe, sales assistant in the Houston, Tex., district sales office of **Inland Steel Co.,** has been transferred to Dallas, Tex. **Stuart A. Pennels** has been transferred from Chicago to replace Mr. Wolfe in Houston.

Luther Smythe has been appointed eastern division sales representative—containers for **Fruehauf Trailer Co.,** at Kearny, N. J., where he formerly served as salesman.

Eugene F. Leherissey, owner of Gibbs-Leherissey, 332 South Michigan Avenue, Chicago, will handle railway sales in the Chicago area for **C&D Batteries,** Division of the Electric Autolite Co.

Donald S. Onnen, former director of research for the **New Haven** at New Haven, Conn., has been appointed a member of the sales engineering division of the **Cuno Engineering Corp.,** Meriden, Conn.

Headed by **C. J. Moore,** vice president—marketing, a new sales and service organization, the Exide Industrial Marketing Division, has been created by the **Electric Storage Battery Co.** to serve as the marketing arm for its Exide Industrial Division and its new Nickel-Alkaline Division. It combines into one unit the nation-wide Exide industrial sales and service engineering facilities with those of the former Edison Storage Battery Division of Thomas A. Edison Industries, McGraw-Edison Co., now called the Nickel-Alkaline division.

L. E. Gunther has been appointed an eastern representative for **M & J Diesel Filter Corp.,** Chicago, and **Unity Railway Supply Co.,** Chicago. Mr. Gunther will have headquarters in Richmond, Va.

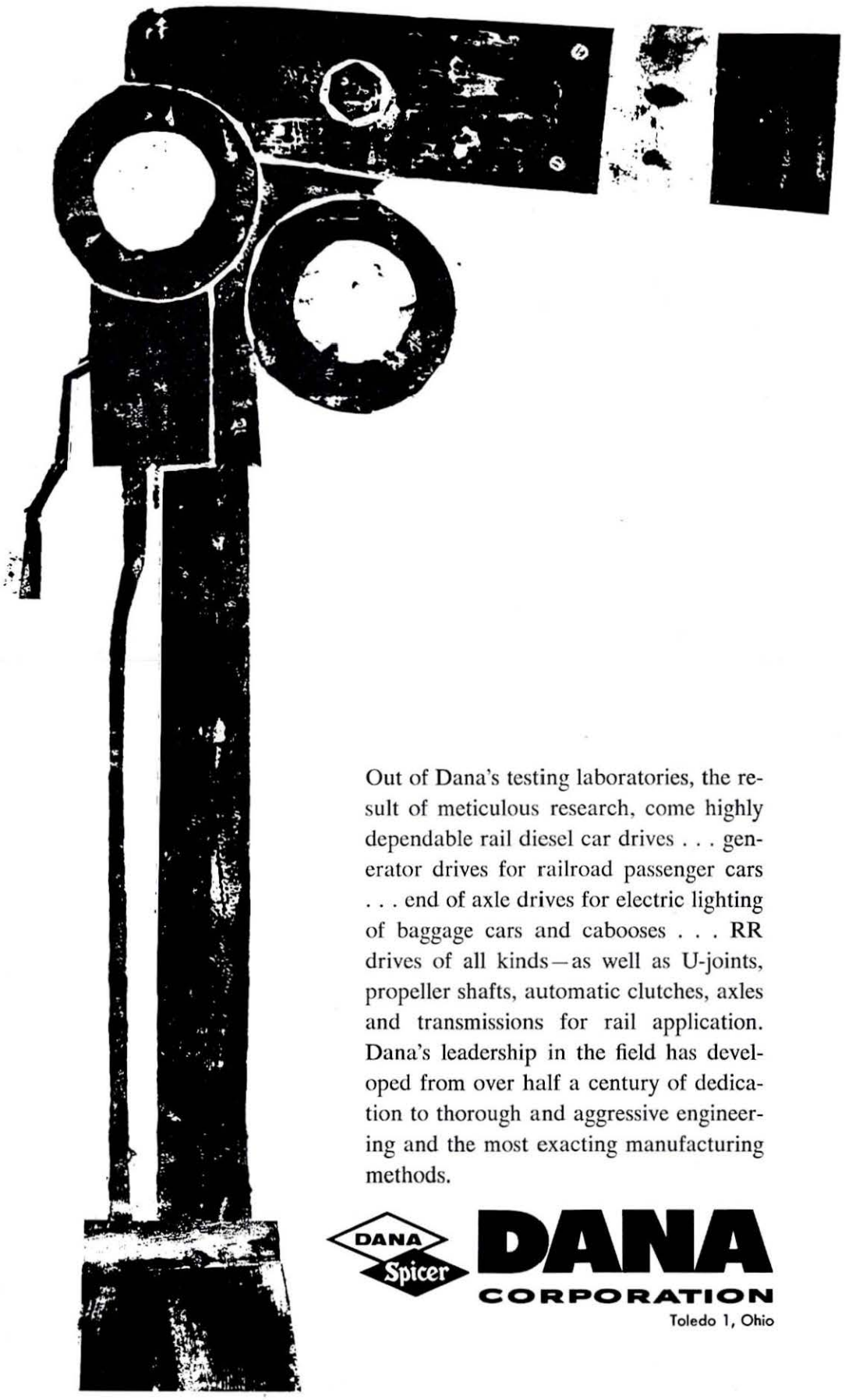
Mel H. Frank of the **Mel H. Frank Co.,** Cleveland, has been named sales representative for **Unity Railway Supply Co.,** Chicago, with responsibility for sales throughout the Cleveland area.

R. R. Baker has been appointed director of the newly-organized international sales department of **Pullman-Standard.**

OBITUARY

Herbert Field McLaury, 70, who retired in Oct. 1958 as advertising manager, **Association of American Railroads,** died Jan. 23 at Montgomery General Hospital, Olney, Md., after an extended illness.

William W. Finley, Jr., 72, who retired in 1956 as manager of freight traffic research, **Pennsylvania,** died Jan. 26 at his home in Bryn Mawr, Pa.



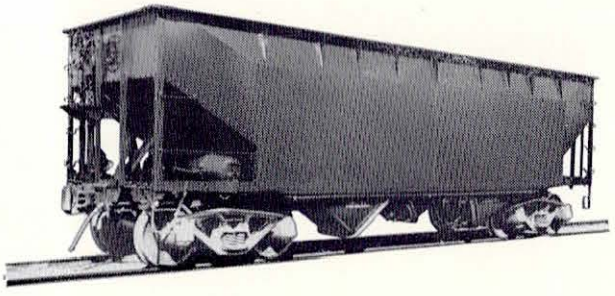
Out of Dana's testing laboratories, the result of meticulous research, come highly dependable rail diesel car drives . . . generator drives for railroad passenger cars . . . end of axle drives for electric lighting of baggage cars and cabooses . . . RR drives of all kinds—as well as U-joints, propeller shafts, automatic clutches, axles and transmissions for rail application. Dana's leadership in the field has developed from over half a century of dedication to thorough and aggressive engineering and the most exacting manufacturing methods.

DANA Spicer **DANA CORPORATION**
Toledo 1, Ohio

SERVING RAIL TRANSPORTATION—Transmissions • Universal Joints • Propeller Shafts • Generator Drives • Rail Car Drives • Pressed Steel Parts • Traction Motor Drives • Forgings • Stampings

finest size lading won't leak...

NEW STANDARD HOPPER DOORS



Here is a steel door made to *fit* a steel frame so tight that even the finest lading, the finest sand, will not and cannot leak through. Gaskets, packing and fillings are not needed. Precision fabrication is the secret of the tight fit.

Standard Hopper Doors stay square in service, never vary in fit, stay tight and will not spring. Maintenance and replacement troubles and costs are dramatically cut. Cargo loss is practically eliminated.

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STANDARD RAILWAY EQUIPMENT
division of STANRAY CORPORATION
HAMMOND, INDIANA • NEW YORK • CHICAGO • SAN FRANCISCO

MEMBER

MARKET OUTLOOK *at a glance*

Carloadings Drop 2.8% Below Previous Week's

Loadings of revenue freight in the week ended Jan. 28 totaled 476,403 cars, the Association of American Railroads anonunced on Feb. 2. This was a decrease of 13,646 cars, or 2.8%, compared with the previous week; a decrease of 128,643 cars, or 21.3%, compared with the corresponding week last year; and a decrease of 106,053 cars, or 18.2%, compared with the equivalent 1959 week.

Loadings of revenue freight for the week ended Jan. 21 totaled 490,049 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Jan. 21

District	1961	1960	1959
Eastern	68,101	94,161	83,576
Allegheny	72,895	112,466	96,499
Pocahontas	41,673	51,868	49,233
Southern	102,114	112,835	107,498
Northwestern	57,913	63,505	61,676
Central Western	102,906	105,076	109,994
Southwestern	44,447	47,496	47,274
Total Western Districts	205,266	216,077	218,944
Total All Roads	490,049	587,407	555,750
Commodities:			
Grain and grain products	56,330	47,065	51,256
Livestock	3,786	4,772	5,021
Coal	92,990	112,469	111,878
Coke	5,243	11,585	7,879
Forest Products	34,284	38,794	37,209
Ore	11,418	21,558	15,780
Merchandise l.c.l.	28,528	37,176	40,425
Miscellaneous	257,470	313,988	286,302
Jan. 21	490,049	587,407	555,750
Jan. 14	516,210	605,793	586,342
Jan. 7	439,193	589,801	550,666
	1960	1959	1958
Dec. 31	406,346	483,857	468,219
Dec. 24	467,978	468,889	432,148
Cumulative total, 3 weeks	1,445,452	1,783,001	1,692,758

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Jan. 21 totaled 9,363 cars, compared with 9,435 for the corresponding 1959 week. Loadings for 1960 up to Jan. 21 totaled 28,197 cars, compared with 28,026 for the corresponding period of 1959.

IN CANADA.—Carloadings for the seven-day period ended Jan. 14 totaled 61,559 cars, compared with 48,259 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
Jan. 14, 1961	61,559	24,734
Jan. 14, 1960	66,996	27,995
Cumulative Totals		
Jan. 14, 1961	109,818	45,265
Jan. 14, 1960	115,835	52,214

New Equipment

PIGGYBACK

► *Trailer Train.*—Ordered 600 85-ft, roller-bearing piggyback flat cars from ACF, Bethlehem Steel, General American and Pullman-Standard at an estimated total cost of $8,100,000. Deliveries will be completed in March. The new cars, described as being "of several different but compatible designs," will increase Trailer Train's total fleet to 6,259 units.

New Facilities

► *Bolivian Railways.*—Will purchase new parts and materials valued at $3,400,000 under a project to be financed through the Inter-American Development Bank. Details may be obtained from the bank's office, 801 19th St., N.W. Washington, D.C.

► *Chicago & Eastern Illinois.*—Ordered equipment from General Railway Signal Co. for installation of CTC between Danville and Watseka, Ill., 46 miles.

► *Hedjaz Railway.*—The Executive Committee for Recommissioning the Hedjaz Railway invites bids until April 3 for rehabilitating the line between Ma'an, Jordan, and Medina Al-Munawara, Saudi Arabia, 503 miles. Specifications and conditions, design report, profile of the project and other relevant documents are available from the committee, Box 134, Damascus, Syria, U.A.R.

► *Iranian State Railways.*—Will use part of a $15,000,000 Export-Import Bank credit to purchase locomotives and rail cars in the U.S.

► *Iraqi Republican Railways.*—Invites bids for construction of bridges and culverts between Ghubaishiyah and Maqil, 37 miles, on the Baghdad-Maqil-Um Qasir standard gage line. Conditions and specifications are available from the Directorate General of Railways, Baghdad.

► *New York City Transit Authority.*—Placed an $8-million order with Union Switch & Signal Division of WABCo. for automatic signaling and interlocking equipment to be installed on the Lexington Avenue Line of the IRT subway.

Maintenance Expenditures

► *Down 3.7% in November.*—Expenditures by Class I roads for maintenance of equipment, way and structures in November 1960 were down about $8.8 million, compared to the corresponding month in 1959, according to report of AAR Bureau of Railway Economics summarized below:

	Nov. 1960	Nov. 1959	% Change
Maintenance of Way and Structures	$ 92,574,487	$ 94,677,068	—2.2
Maintenance of Equipment	138,025,148	144,698,048	—4.6
Totals	$230,599,635	$239,375,116	—3.7

Missile Car Readied for Test

► **The Story at a Glance: America's first missile-launcher railroad car arrived in Seattle, Wash., last Tuesday, ready for final outfitting and the test firing of a Minuteman missile later this year.**

Boeing Airplane Co., prime contractor for the Minuteman, will install launch gear in the car. Actual date for the test firing was not revealed, but it was learned that it will occur later this year at Cape Canaveral, Fla.

American Car & Foundry Division of ACF Industries built the missile car and will produce four more in the program. ACF and American Machine & Foundry Co. are sub-contractors in the missile car development. AMF is providing hydraulic equipment and controls.

Armed missile trains, able to rove the U.S. rail network in unpredictable patterns, have moved a step closer to reality.

The first car for such service—and one from which a Minuteman ICBM will be test-fired later this year—is now ready for final outfitting at Boeing Airplane Co.'s plant in Seattle.

(In its first test-firing from a ground position, the Minutemen scored a "spectacular success" last week.)

The car left ACF's Berwick, Pa., plant late Jan. 25. It was handled to Chicago in passenger-train service, and from Chicago to the coast in a hot-shot Milwaukee Road freight train.

The missile car, painted Air Force blue and stencilled "101X," is 88 ft over couplers (79 ft 6½ in. over end sills), 10 ft 2 in. wide, and 15 ft ¾ in. high.

In appearance it is similar to a standard baggage car. The roof is rounded, and on the sides, extending almost from floor to roof line, is stencilled a 1776 "Minuteman." This first car has doors in the ends only, although later versions will have a personnel door in the side.

The concept of the car, with capacity to provide a cushioned ride for the 58-ft Minuteman and serve also as a launching pad, imposed rigid design requirements.

The need for shock-free riding quality was met by built-in "three-way" cushioning—coil springs and rubber air bags in parallel on the six-wheel trucks for vertical shock absorption and constant coupler height; a 15-in. travel sliding center sill for longitudinal cushioning, and swing hangers for transverse protection. The car is equipped also with rubber draft gear and passenger-car couplers.

Stiffness and strength requirements, which are most severe in the area near the center of the car where the ICBM will stand upright for launching, were met by the liberal use of LAHT steel. In fact, this alloy has been used throughout the car as an important weight saver. And weight was a problem; the solid-fuel Minuteman alone will weigh in excess of 30 tons.

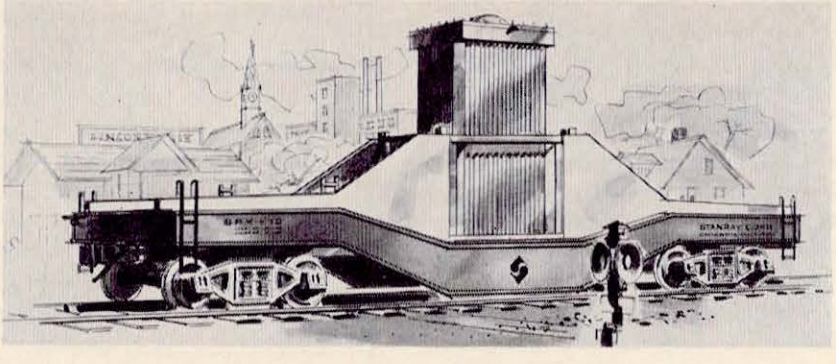
To distribute this weight the car has an uncommonly large center sill. The fishbelly design drops low between the trucks and is in excess of 30 in. at its wider point. In addition, in the floor area where the missile will stand upright, the car is equipped with cross-members which measure close to 36 in. in depth. Stiffness in the car's backbone is vital at this point.

The six-wheel trucks are not radical, considering the car's uncommon assignment. Four-wheel versions have been used in passenger cars. Wheels are 33-in. wrought steel. Roller bearings are utilized. Outside swing hangers and spring planks carry the bolster through the combination of helical coil and air springs. Pressure in the air springs is regulated to maintain the proper coupler height.

One unusual feature, however, is what ACF engineers call a "truck locker." This device will be used just prior to the firing of a missile. In effect, it locks the trucks to the car body. Then, special jack pads descend hydraulically to the face of the ties and lift the entire car clear of the rails. This is to provide a stable platform for the firing. Connected to those jacks nearest the launch pad is a 10-ft-square steel flame detector that lowers over the ties and rails to protect them from the back blast. Meanwhile, the trucks will provide needed ballast, which could be particularly important in high wind areas.

The arched roof of "101X" is in three sections. A 45-ft section above the body of the Minuteman is constructed as two halves which fold outward to give the missile room to rise into launching position. The second section, approximately 22 ft directly above the launching area, lifts upward and rolls back over the third section. The latter section is fixed and permanent; it covers the end of the car in which the control room is housed.

The contents of this room are the responsibility of AMF. Presumably, the controls here will not include the last-minute firing device since there will be no personnel on the car at the time of a "shoot." Such instruments as these will be housed in a separate Command car, the design of which is also being handled by the ACF-AMF team. In addition, ACF will design and build a special power car for missile-train use.



Stanray to Haul Spent Atom Fuel

A contract for transporting spent fuel from the N. S. Savannah, world's first nuclear-powered merchant ship, has been awarded to Stanray Corp. by the U. S. Maritime Administration. It's the first contract award for transporting, with privately owned and operated equipment, large quantities of nuclear power reactor spent fuel elements. Stanray will design and construct the equipment and will be responsible for loading, shipping and unloading the spent fuel elements. The shipping unit will be a stainles steel container mounted on a special flat car, as shown in the artist's conception above. The container itself, 11 ft high and 5 ft wide, will have 10-in. lead walls and will weigh 55 tons. The Savannah is scheduled for sea trials by early spring. Services to the ship by Stanray are expected to begin during 1962.

As the Publisher Sees It

RRs Need Union Statesmanship

Mr. Hoffa of the Teamsters is taking aggressive action against the railroads because they are recapturing a small segment of traffic from the truckers. But while truckers, year after year, whittled away at railroad traffic, brotherhood leaders concentrated efforts on make-work to bolster sagging employment. They put the blame on railroad management, which was the easy out, but didn't help the employment situation. Now that the shoe is on the other foot in at least one area of the total traffic picture — management's aggressive and successful promotion of piggybacking—the Teamsters are going all-out to protect employment in their union. They are not blaming the truck operators; they are attempting to check their competition.

Railroad brotherhoods representing 750,000 employees today, as against 1,221,000 just ten short years ago, are still trying to hold membership by attacking legislation that permits railroads to discontinue trains no longer patronized by the public; by attempts to preserve jobs that are invalidated by technology (e.g., firemen on diesels), and seeking legislation under the guise of safety requiring train-crew protection for track motor cars, burdensome air brake inspection rules, and so on.

If the Teamsters behaved like the railroad brotherhoods, they would not take steps to hamper growth of piggyback; rather, they would be plugging for two men in the cabs of automobile truckaway tractors. But Mr. Hoffa's union is much smarter. It recognizes that such demands on the truckers would make highway costs uncompetitive. After all, the sheer economic strength of the Teamsters could have forced 150-mile days for truck drivers long ago. Such a practice has never been pressed because the Teamsters recognize that any increase in employment thus secured would be rapidly wiped out by traffic losses resulting from increases in trucking costs and, hence, trucking rates.

Unemployed railroaders can point a telling finger at union leaders, whose interest in the railroad industry has been limited to the share of dwindling gross they have been able to appropriate for their remaining, and senior, members.

At no time has the need for statesmanship by railway labor leaders been so great or crucial. It will not be achieved so long as competitive brotherhoods limit their activities to a scramble for their respective share of the dwindling spoils.

One exception to the negative approach, at the local level at least, is the growing program on the Reading, where local chairmen are tackling the problem of holding and expanding traffic. And at least one member of this group, we understand, is ready to go to bat for piggybacking in opposition to the union leaders for the truckers.

Robert G. Lewis

Diversification: Truckers' View

Motor carriers are sticking with their charge that "the main objective of rail entry [into the trucking field] is to checkmate the development of truck service in the hope of driving business back to the railroads."

Lee R. Sollenbarger, executive vice president of Transcon Lines, contends that the way to a stronger national transportation system lies not in rail diversification but rather in a "strong and conscientious program of rail-truck coordination." Among the areas where he thinks rails and trucks might get together:

- Joint rates and routes.
- Plan I piggyback.
- A joint effort to restrict or remove the exempt commodities clause from Part 2 of the Interstate Commerce Act.
- A strong curtailment, "if not elimination, of Section 22 rates, except during national emergencies."
- An amendment to the Act "to allow motor carriers, as well as other modes, the right of injunctive processes against those who are operating illegally in certain specified areas."
- The elimination of "many unnecessary restrictive state laws."

Mr. Sollenbarger presented his anti-diversification, pro-coordination views at a meeting of the San Francisco Bay Area chapter of the ICC Practitioners Association. Earlier, the group had heard the railroad case from Clair M. Roddewig, president of the Association of Western Railways, who called diversification a "dynamic and positive step in the direction of strengthening the common carrier system" (RA, Dec. 5, 1960, p. 24).

Mr. Sollenbarger would have none of that. He charged that "if history repeats itself, and present hostile attitudes persist, the real interest of at least some railroads in engaging in other forms of transportation may well be to burrow from within and undermine what are now independent branches of transportation. The unhappy result would be . . . the ultimate restoration of railroad monopoly of overland transportation."

Transcon's executive vice president also contended that "we find a complete failure of railroads to specify their intentions, factually, in connection with motor carrier operations, if permitted. This lapse is not one to be regarded lightly. They have asked us to give them a blank check without first having established their credit."

Arguments that existing motor carriers would be protected under certification restrictions and that the threat of private carriage would be a restraint against monopoly haven't convinced the truckers, Mr. Sollenbarger added.

He questioned whether railroads would use their motor carrier certificates to create more than mere feeder lines to rail routes. And he challenged the private carriage theory by citing Transcon's experience last year: TC, he said, handled about 860 million pounds of freight in 1,100,000 shipments, an average of about 800 pounds per shipment—"fairly representative of the average motor carrier. Certainly, there were a few shippers who, if necessary, could get by with some kind of private carriage. . . . But what about all those small shippers who must find a way to compete with the larger shipper, but are not large enough to provide their own service?"

Port Agency Bids $20.5 Million

► **The Story at a Glance: The Port of New York Authority has offered to pay $20.5 million for the properties of the bankrupt Hudson & Manhattan, then pour $63 million into a rehabilitation program (including 237 new cars) and operate the rail rapid transit system at an estimated annual loss of $5,000,000. H&M Trustee H. T. Stichman hailed the Port Authority's willingness to help resolve New York's commuter crisis, but said a fairer price for the H&M would be $50 million.**

"Both rail and highway transportation are essential to the economic welfare of the people of the New York-New Jersey metropolitan region," Vice Chairman James C. Kellogg, III of the Port of New York Authority told a New Jersey Senate Commission. For this reason, the Port Authority is ready to acquire, finance, improve and operate the railroad, terminal and real estate properties of the bankrupt Hudson & Manhattan Railroad, Mr. Kellogg said.

Port Authority terms, as Mr. Kellogg outlined them, are:

- Action by the legislatures of New Jersey and New York to make it possible for the Port Authority to finance such a project. Specifically, this would require legislation permitting use of Port Authority revenues through a general reserve fund to meet the estimated annual H&M deficit to the Authority of $5 million plus "statutory assurances that this proposal will not involve the Authority's General Reserve Fund in any other or further commuter deficit operations."
- Acquisition by the Port Authority at a fair and realistic value of what the Authority called "the dilapidated properties of the H&M." This, Mr. Kellogg made clear, would not be higher than a $20.5 million value placed on the properties last year by the Securities & Exchange Commission.
- An agreement with the Pennsylvania Railroad to make it possible for the Port Authority, as a public agency, to continue to use PRR tracks under the terms of the present agreement for the joint operations of the two railroads between Jersey City and Newark.

Port Authority studies show, Mr. Kellogg said, that about $63 million beyond the purchase price would be required to make a modern transit operation out of the Hudson & Manhattan.

Thus, the total capital outlay by the Port Authority would be nearly $85 million, Mr. Kellogg said. Of this, improvements to the physical plant, including "the immediate and necessary replacement of the railroad's obsolete signal system with a modern installation that would permit not only a greater number of trains, but safer and more reliable operation, . . . an entirely new, modern power distribution system, . . . major rehabilitation and refurbishing of the H&M passenger stations, . . . and extensive track maintenance work" would require expenditures of $30 million.

A total of 237 new, air-conditioned modern cars to replace the old cars would cost another $24 million, Mr. Kellogg said, noting that 288 new cars would be needed in all, but under existing operating agreements with the H&M, 51 of these would be provided by the Pennsylvania Railroad.

Rehabilitation of Hudson Terminal office buildings in downtown Manhattan would add $9 million more to the total cost, Mr. Kellogg said.

A rehabilitated H&M would handle greatly increased traffic, Mr. Kellogg said, noting that New Jersey's Division of Railroad Transportation anticipated ending Hudson River ferry service by bringing Jersey Central passengers into Pennsylvania Station, Newark, where they could transfer directly to the Hudson & Manhattan. Erie-Lackawanna passengers already have access to an H&M station at Hoboken.

"If the legislatures make it possible for us to finance this H&M project," Mr. Kellogg said, "all of these 288 modern transit cars, with the cooperation of the Pennsylvania Railroad, could be rolling within a three-year period."

"Acquisition, rehabilitation and operation of the H&M will involve an annual deficit to the Authority of about $5 million," Mr. Kellogg said, adding that he and other PA commissioners were "of the opinion that an annual deficit of this magnitude can be carried by our other facilities."

"In the normal course of events," he concluded, "we would hope that the Port Authority might be able to acquire and commence the operation and rehabilitation program of the H&M before the end of 1961."

Herman Stichman, trustee of the

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for H&M

bankrupt H&M, took issue with some of the Port Authority figures.

"It is good to learn," Mr. Stichman said, "that the Port of New York Authority, after delaying for 40 years any start in aiding rail commuter transportation, one of the tasks for which it was created in 1921, is at long last ready to do so."

Mr. Stichman praised the idea of using the Hudson Tubes to link New York's transit system with New Jersey commuter railroads and suggested that eventually a transit loop with through operation between Jersey points and the New York subways and operating over the subways would be needed.

As to the value of H&M properties, both railroad and office buildings, Mr. Stichman strongly disagreed with Mr. Kellogg. The SEC figure of $20.5 million was not a "valuation," but an "estimated liquidation value of the railroad" based on scrapping the railroad, Mr. Stichman said.

Mr. Stichman suggested that a "fair purchase price" for the H&M properties would be $50 million. He cited a 1960 report by outside engineers that said the Tubes should bring between $25 million and $35 million if sold to a public body; to this he added a 1957 appraisal of the office buildings at $17 million, plus $4 million committed subsequently for modernization.

Split Traffic Economically, For-Hire Carriers Advised

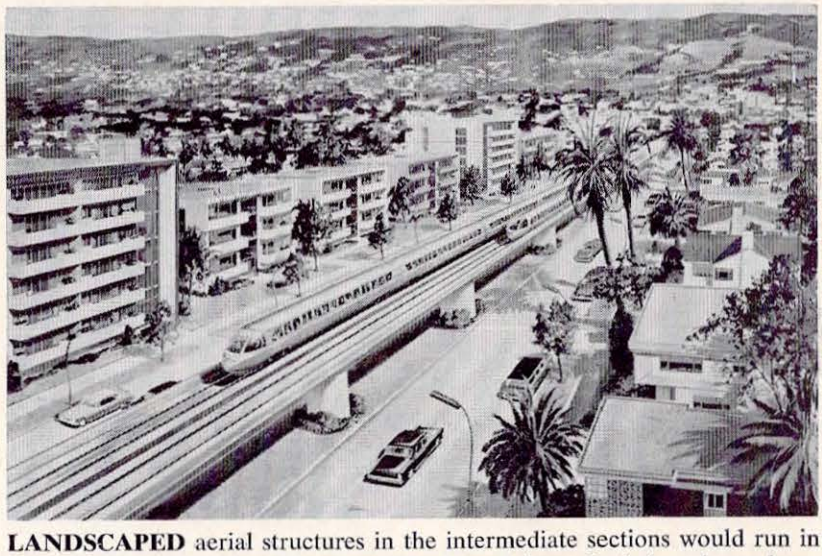
Profitable railroad performance "requires the railroads to make attractive rates where they have an economic advantage, and to relinquish traffic which is not compensatory," the New Jersey Industrial Traffic League was told by James G. Lyne, editor of Railway Age.

Mr. Lyne, who is also director of commercial research for the Traffic Executive Association — Eastern Railroads, suggested that "it would be to the advantage of all for-hire carriers to approach the problem of competitive rate-making on the basis of letting the 'other fellow' take the traffic he can handle with greater economy—thereby reducing the average costs and rates of all for-hire carriers."

He added: "Such an approach to rate-making would increase the overall demand for transportation, by minimizing the incentives producers now have to seek substitutes for transportation—such, for instance, as decentralization of production."

Bay Area Transit

The future of rapid transit—if present plans are carried out—in San Francisco's five-county Bay Area Rapid Transit District has been visualized for area residents in a series of detailed photo renderings by artist John Gould. Mr. Gould's renderings, prepared from photographs of the area modified in accordance with engineering plans of the rapid transit district, show the three kinds of facilities planned, as they will appear: subways, like the proposed bi-level Market Street subway at right, in the congested downtown areas; so-called "aerial transit" facilities in intermediate sections and terminals at shopping centers. The 100 miles of high-speed rail transit would operate at speeds up to 85 mph.



LANDSCAPED aerial structures in the intermediate sections would run in the centerlines of widened avenues, like Hearst Ave., Berkeley, shown here.

SHOPPING CENTER TERMINALS, like Bay Fair, San Leandro, would serve regional commuters, provide downtown trans-bay service in 22 min.

You Ought To Know...

ICC has "under active study" the operating brotherhoods' plea for a general investigation of tank truck-train grade crossing accidents, ICC Chairman Hutchinson told chiefs of the organizations last week. The request was rejected once, but the unions then filed a petition for reconsideration, which is now before the Commission.

A 430-acre tract for industrial development has been purchased by the Union Pacific in northeast Denver, near its established 120-acre East Denver Industrial District, to "keep pace with the rapid industrial expansion" in the area.

Continuing growth of the West and Southwest was reflected clearly last year in the results of Southern Pacific's industrial development program. SP's report for 1960 showed an average net gain of one new industry per day.

Interstate train-off provisions of the 1958 Transportation Act do not apply to rail-bus service of which the rail segment is intrastate. The ICC so ruled in dismissing, for lack of jurisdiction, a train-off notice whereby the New York, Susquehanna & Western undertook to discontinue New York City commutation services which involve rail operations between Butler, N. J. and Susquehanna Transfer, and bus service between the latter point and New York. Susquehanna contended that the coordinated operation amounted to an interstate "train" service. This position was challenged by New Jersey and by the Susquehanna Transit Commuters Association. The ICC's dismissal order upholds the challengers. Susquehanna is thus left with recourse to the ICC only under the 1958 act's intrastate provisions. These permit appeal to the Commission only after state authorities have had 120 days to deal with the matter.

Stockholder meetings will be held in April and May—Northern Pacific on April 27, Burlington on May 3 and Great Northern on May 11—for voting on the three-road unification proposal. Spokane, Portland & Seattle, owned jointly by GN and NP, would be leased by the merged company for 10 years. Pacific Coast Railroad Company, a small, wholly-owned GN subsidiary, would be included in the unified Great Northern Pacific & Burlington Lines.

A full-time press and public information office will be maintained in Washington, D.C., by the five operating brotherhoods during the time the Presidential work rules commission is in session. The office, to be set up at the Dodge Hotel, will be manned by union PR officers and will make available texts and summaries of union presentations to the commission.

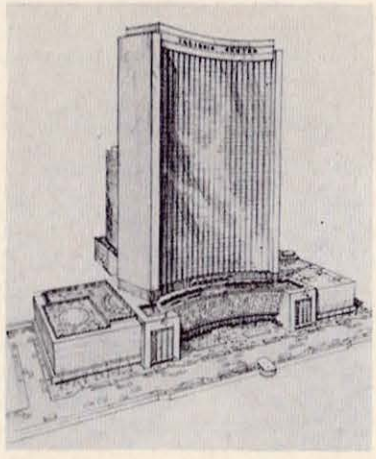
AAR has elected two new directors —Erie-Lackawanna President M. G. McInnes and Milwaukee President W. J. Quinn. They succeed, respectively, former Erie-Lackawanna President H. W. Von Willer (now chairman of the board), and Downing B. Jenks, who resigned as president of the Rock Island to become president of Missouri Pacific.

H. E. Gilbert, president of the BLF&E, is confident that the work rules study will "reaffirm public understanding and acceptance" of locomotive firemen. He told union officers from five midwestern roads that the commission has the opportunity to become a forum "where facts and figures will rank above slurs and slogans."

A threatened strike against New York Central by ORC&B (over the number of conductors assigned to sleepers) was averted last week by a settlement that calls for maintaining the status quo until April 1, when timetables are changed. At that time the parties will negotiate on any questions of reducing or adding to conductor assignments, with the dispute going to arbitration in event of disagreement. The dispute between the railroad and the union dates back to 1958, when NYC released 95 Pullman conductors.

Optimism (of the cautious variety) keynotes the Milwaukee Road's outlook for 1961. Two factors—forecasts of an increase in industrial output and construction later this year and indications that '61 will be a good year for crop production—are the bases on which Chairman Leo T. Crowley and President William J. Quinn are building their expectations for increases in revenues and earnings.

More liberal credit arrangements will be offered carload shippers next month. The ICC has affirmed its prior finding to the effect that its credit regulations should be modified to permit railroads generally to allow a maximum of 120 hours, instead of the present 96-hour allowance, for payment of charges. The 120-hour plan already applies to LCL charges. The liberalization, effective March 10, comes in response to a petition filed by Southern-Territory railroads which sought to do something to meet the competition of still-more-liberal credit arrangements offered by truckers. Official - Territory roads, other than C&O, opposed the liberalization.



'Illinois Center'

A $150 million development, centered around a high-rise office building-hotel complex is the look of the future for a six-block area on Chicago's lake front. The development, to be known as Illinois Center, is to be constructed on air rights acquired from the Illinois Central. An option-purchase agreement was recently worked out between IC and the Illinois Center Corporation of Texas.

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Advertisers' Index

Aerojet-General Corporation ..... Inside Back Cover

Bethlehem Steel Company 3

Brenco, Inc. 17

Buckeye Steel Castings Company 8

Buffalo Brake Beam Company ..... Inside Front Cover

Classified Advertisements 37

Dana Corporation 29

Elliott Manufacturing Company 12

General American Transportation Corporation 4
Dry Flo Car Division

General Chemical Division Allied Chemical Corp. Back Cover

General Steel Castings Corporation 11

Hunt Company, Robert W. 37

Iron & Steel Products, Inc. 37

Jackson Vibrators, Inc. 6

Nalco Chemical Company 34

Speno RR Ballast Company, Inc., Frank 37

Standard Railway Equipment 30
Division of Stanray Corporation

Timken Roller Bearing Company, The 20, 21

Weiss Company, B. M. 37

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ICC Ups the Umbrella

In its decision in the so-called Pan-Atlantic case (I. & S. M-10415), a majority of the Interstate Commerce Commission has virtually repealed the new rate-making clause of the Transportation Act of 1958. That is, the Commission's majority requires (RA, Jan. 16, p. 9) the establishment of railroad piggyback rates between the East Coast and Texas at an arbitrary 6% higher than rates for similar service by a "fishyback" coastwise water carrier (with highway connections at both port terminals).

The 1958 rule of rate-making prohibits the ICC from holding the rates of a carrier at a particular level—solely for the purpose of protecting the traffic of another mode of transportation. The Commission's majority has ridden roughshod over this prohibition, doing so under the qualifying phrase in the law that it must exercise its powers with due regard to "the objectives of the national transportation policy."

The Commission's majority has construed that phrase to mean that the national transportation policy requires it to keep the fishyback operator in business and that, unless railroads are forbidden to make effectively competitive rates, the fishyback carrier might fold up.

The ICC majority makes much of the advantage to the nation's defense of having a fleet of coast-wise vessels in peace-time service—ready to be transferred to overseas service in the event of military need. Excluded from the thinking of the Commission's majority is recognition of the necessity of keeping the railroads in effective operation in peace-time, if they are to be on hand to take over the domestic traffic which the coastwise carriers will abandon when the first shot is fired.

Railroads as a whole earned a little more than 2% on their investment in 1960—and the Eastern roads (heavily involved in this competition from fishyback operators) earned much less than that.

The Commission's majority cited a lot of comparative cost figures—but the essential fact about all the cost talk is that anything the railroads could earn over and above "bare bones" costs on the tonnage the ICC has now forbidden them to go out after, would add just that much to net railway operating income. The Commission's majority has said, in effect, that 2% on investment is plenty for railroads to make—and that, with them earning as little as that, the Commission is going right ahead and whittle that 2% down (perhaps to zero or less) whenever any competing form of transportation comes along and asks ICC intervention to keep it in business.

The Commission's majority does not seem to appreciate the fact that, actually, water and highway transportation are not destroyed when a particular highway or waterway operation is discontinued. The vehicles and vessels are simply transferred to other locations. If economic conditions change (e.g., if railroad rates are forced upward too high), these vehicles and vessels can be back in competition almost overnight.

When a railroad is forced out of business, it's entirely different. When tracks are torn up, they stay torn up. The fact that the learned regulators should be so concerned to keep fishybacks profitable—at the expense of the railroads, which once abandoned are a permanent loss to the nation—is just one of those quirks of the regulatory mind that are hard for the simple layman to follow.

A Commission majority recently handed down a decision in a private motor carrier case (MC-117568), in which the carrier was permitted to become a contract carrier, while remaining in substantially the same ownership as before—just another instance of regulatory concern for the prosperity of non-rail transportation, with no parallel concern for the health of the railroads.

It is, perhaps, a compliment to the reputation the railroads have acquired of their ability to "take it," that the regulators keep putting them to the test like this. However, the case of the farmer who fed his mule sawdust should be borne in mind. When the ratio was 25%, the mule kept working; at 50% he slowed down; at 75% he slowed down still more; at 100% he died.

To the credit of several members of the Interstate Commerce Commission, be it said that they are not misled by the myopia of the majority.

It is our belief that decisions such as the foregoing are so manifestly unjust and irrational—and lethal—that the railroads ought to publicize them far more widely than they have done. We do not for a moment believe the American public wants fishyback and other specialized transportation at a few seaports and other favored locations—at the expense of undermining the health of the nation's railroads.

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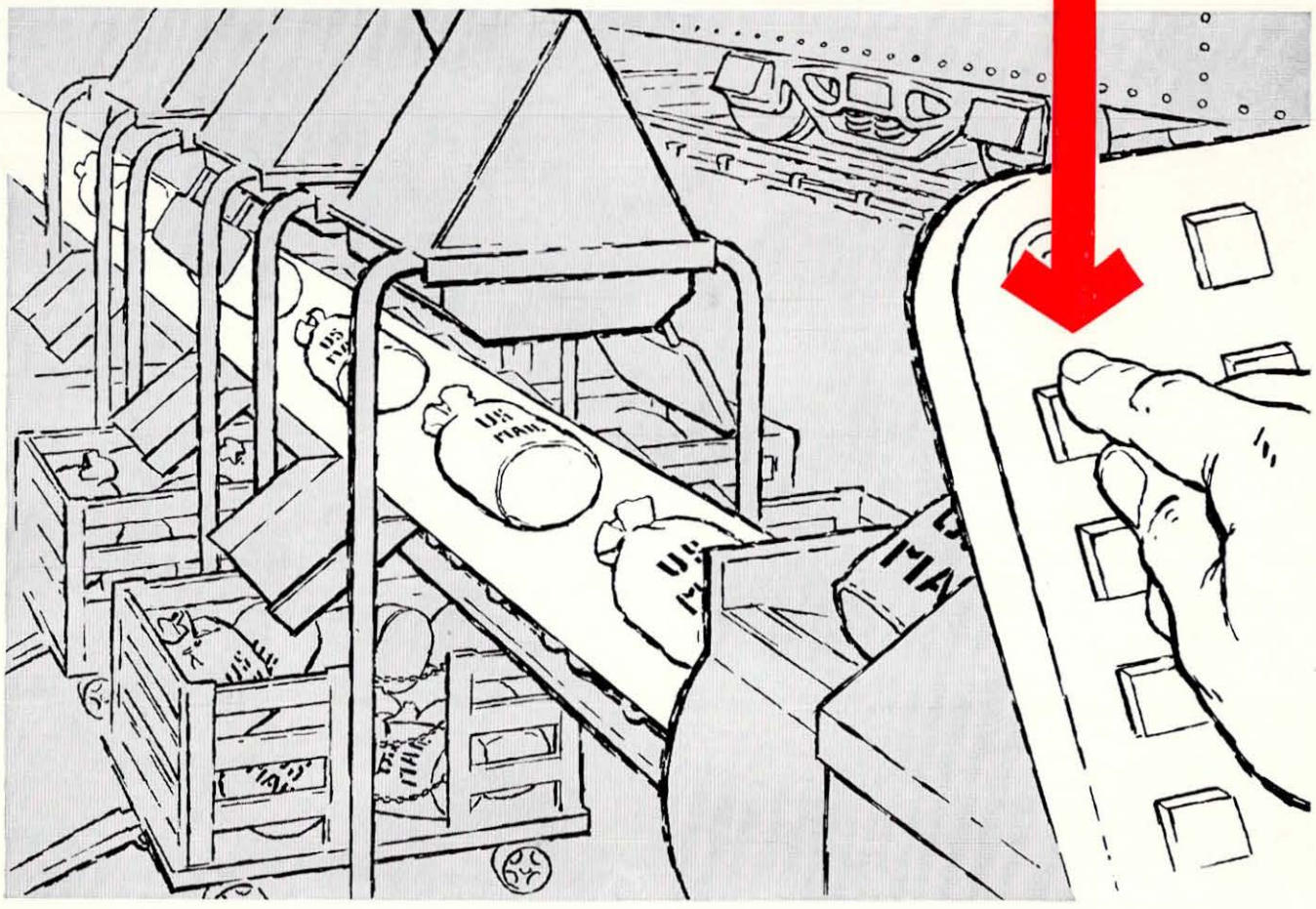

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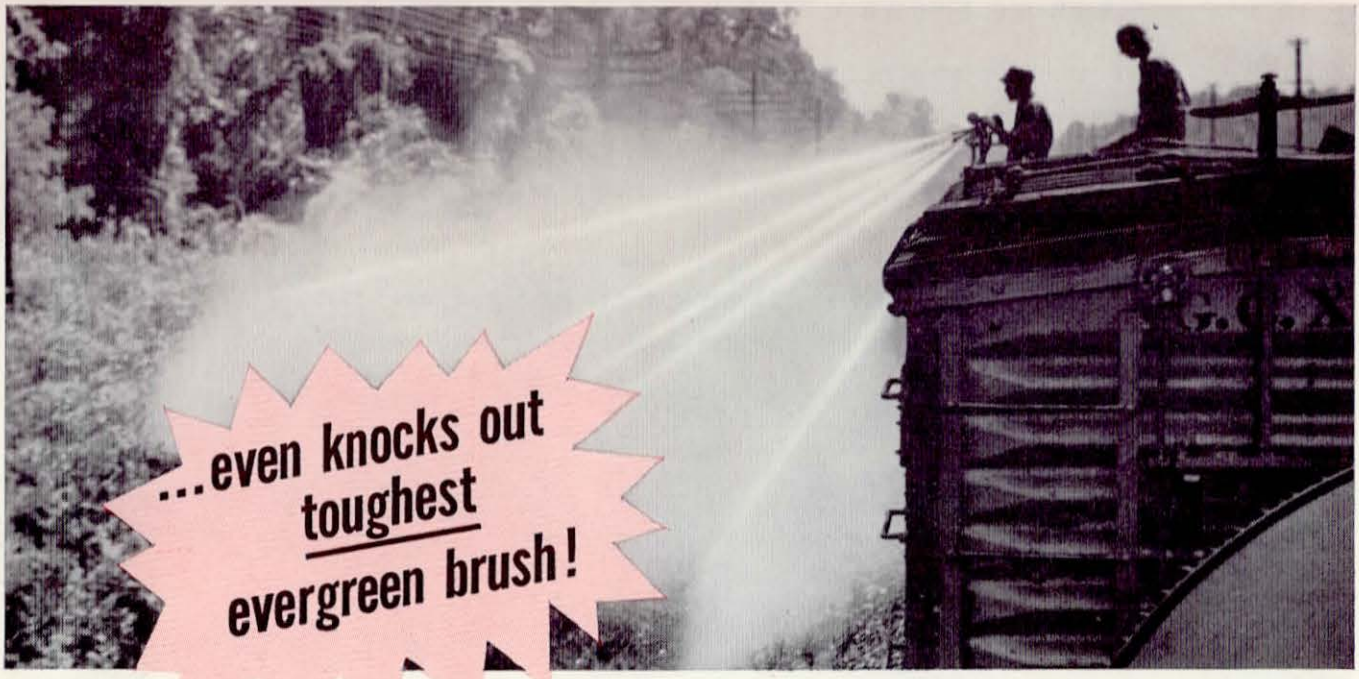

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